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# Motor Trend

OCTOBER 1959 35c

"AUTOMOTIVE TESTING MAGAZINE"

V. 11 #10

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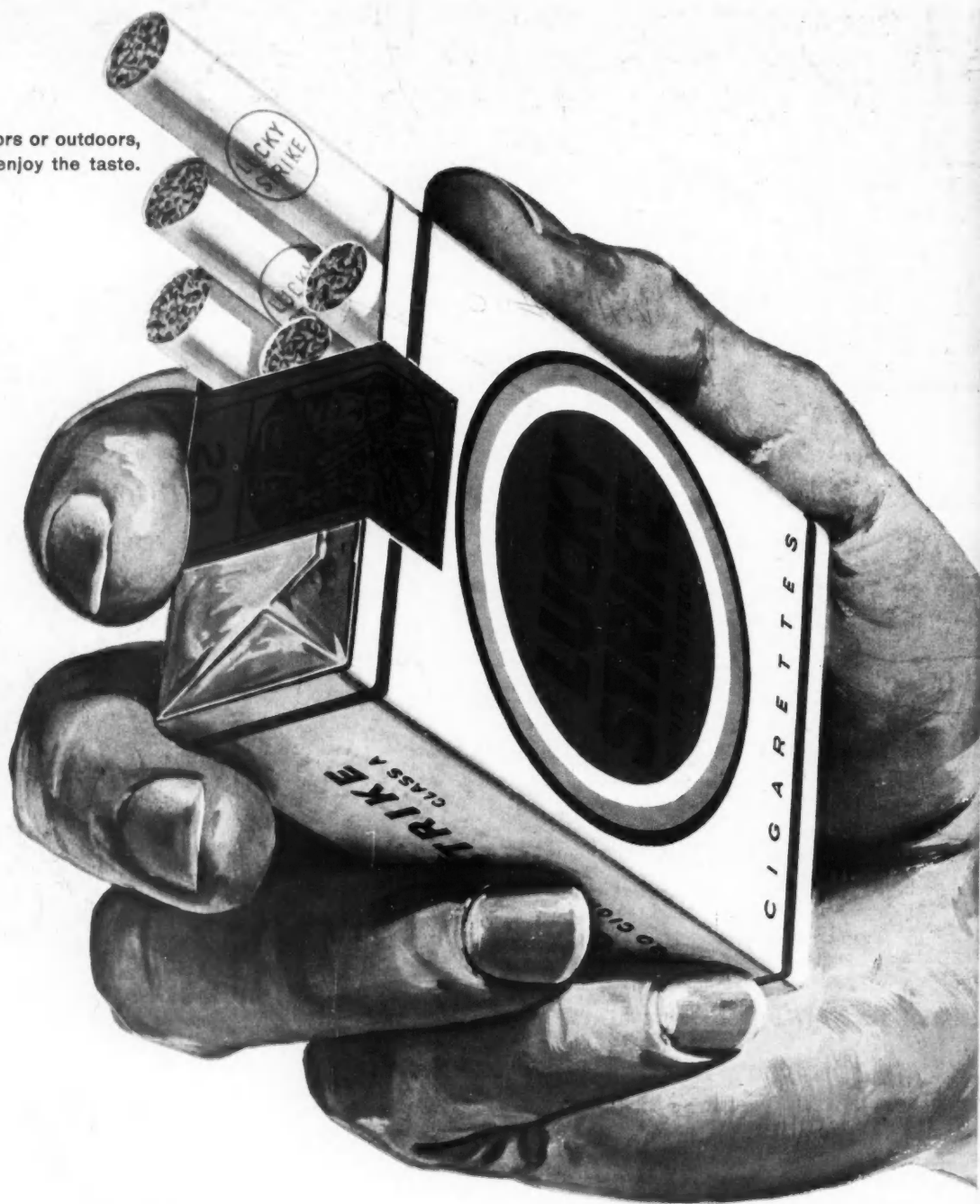


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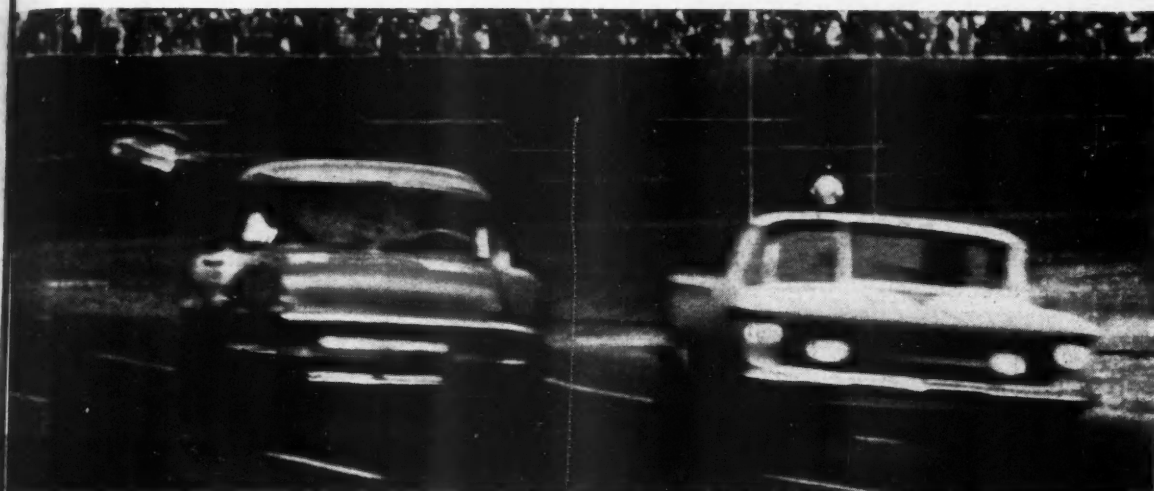
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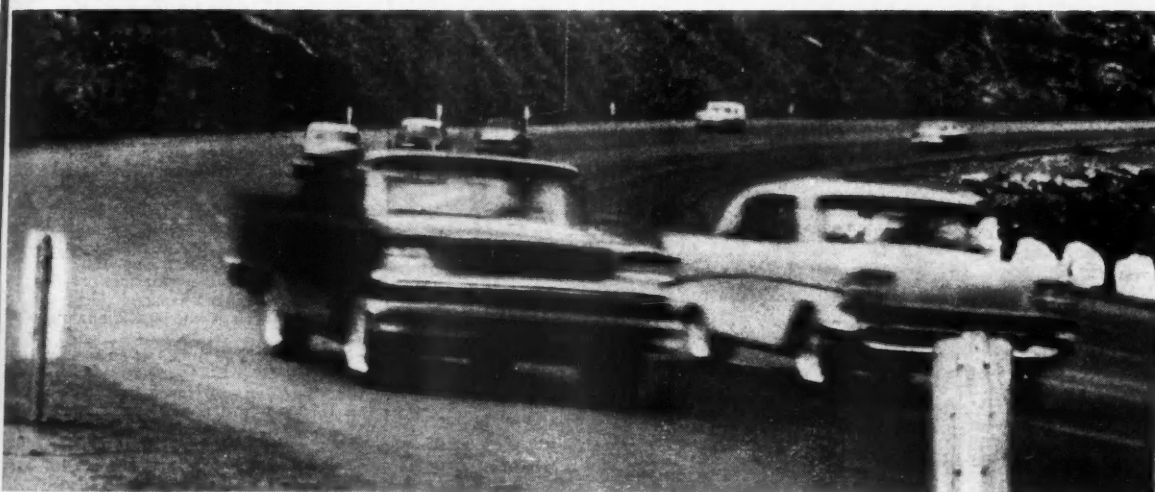
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**Motor Trend**

COVER: Ford's new Falcon caught in various stages of action at the Ford Proving Ground, with New York Editor Steve DaCosta at the wheel. Complete report of his impressions of the Falcon can be found on page 24.

"I DROVE FORD'S NEW FALCON"



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# Motor Trend

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**Detroit's Top Two Engines for '60**

**Make-by-Make Roundup of 1960 Cars**

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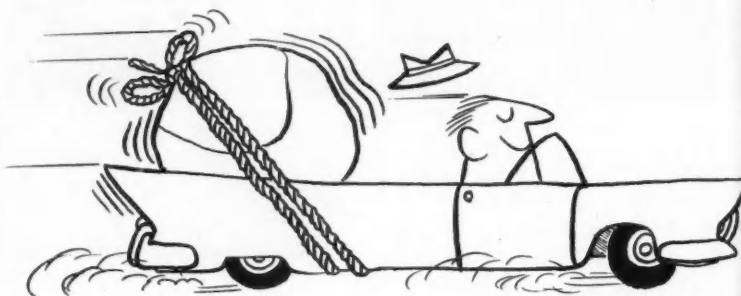
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# PIRELLI

## Letters FROM OUR READERS



### IT'S A LIE!

Dear Sirs:  
Reading through the "Letters from the Readers" in the August issue I became rather infuriated at the comments on the Chevy's lifting of the fins at speeds over 50 miles per hour.

Running my 1959 Impala at the drags, it has been my experience to approach speeds of 100 mph. In all of these runs I found no poor handling or lifting of the tail fins. I have also had the car well over the 120-mph mark on the speedometer and still the fins did not go airborne.

Myles Spring

Brookville, N.Y.

Dear Sirs:

I have also heard rumors to the effect

that the rear ends of '59 Chevys lift off the ground at speeds over 50 mph. I have even heard that in some states the state police have canceled orders for '59 Chevys because of this.

I own a '59 Chevy and have had it up to speeds of 120 mph and have had no trouble. I put about 1000 miles per week on my car and most of my driving is on turnpikes at speeds of 60 to 75 mph.

Ronald M. Gilpin

New York

Dear Sir:

I'm quite sure that GM would not produce such a car in this age of speed.

Paul Hutchings

Toronto, Ont., Canada

### HERE'S THAT YARN AGAIN!

Dear Sir:

I have no proof about what I am going to say. Only eight people and a few of the engineering staff at Ford Motor Co. can prove this.

Back in 1950 eight very top secret engines were developed at Ford. Accidentally all of these engines got sent out with a shipment of production-line engines. No one noticed them because they looked just like the standard Ford engine.

A few (or all) of these engines reached the assembly plant at Buffalo, N.Y. The engines were put in the cars and sold. Still no one noticed these engines.

Then someone at Ford missed the experimental engines and started to track them down. At the same time the owners of the special cars noticed they hardly ever had to fill their gas tanks. They sent letters to Ford. Top executives were sent to Buffalo to obtain the engines. Ford offered money, replacement of the engines—anything to get them back. One man held out and got a sum of money, a new engine and a new car each year for 10 years.

What was so special about these engines? Their lucky owners discovered they were getting 52 mpg and more.

Why aren't these engines in production?

T. R. Buffalo, N.Y.

P.S. Ford got all of the engines back.

### AMERICA FIRST

Dear Sir:

I read in one of your recent issues that plans are under way to introduce the Moskvitch, a Russian car, into the United States.

I think anybody who buys this car is a traitor to America. A question arises. Just what will the Russians do with the money they receive from the sales of this car?

They would probably turn to some other country and buy steel with American dollars so that they can make more missiles.

I am not picking on only the Russian car, but all foreign cars. The automobile



industry is the backbone of America. When people buy a foreign car, they are breaking that backbone slowly and surely.

If people must have small cars, I say that the Rambler and Lark are just as good, if not better, in ride, roominess and looks. To buy American means a better product.

Anthony Elia

Malden, Mass.

### WHY?

Dear Sir:

In your July and August issues, you had pictures of two '59 Cadillacs. You showed the "Estate Carriage," a sleek station wagon being made in London and to be made in Italy, and Queen Elizabeth's semi-convertible, a Cadillac landau, which was made in Canada for her special visit there.

Since the Cadillac is an American luxury car, why are these unique models being made only in foreign countries?

Fred D. Smith, Jr.

Matawan, N.J.

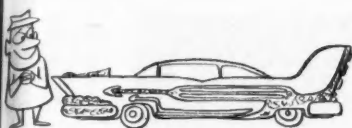
### GIVE THEM A FAIR SHAKE!

Dear Sirs:

I do not believe that U.S.-built cars are getting a fair chance when people slash

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them to pieces for various reasons. They gripe about gaudy chrome. I admit that a few cars overdid it last year, but most of the '59 cars have a delightful touch of chrome, and for the most part are certainly not gaudy.

Economy? Sure, you get more miles to the gallon in a little import, but the style and comfort of U.S. cars would be worth the extra dollars to me.

If a small car is a must, there are the Rambler American and Studebaker Lark. I hope for the sake of the nation's economy that the coming Valiant, Corvair and Falcon go over in a big way.

Bryan Close

Tulsa, Okla.

#### ATTENTION: MODEL CAR CUSTOMIZERS

Dear Sir:

I am interested in starting a nationwide club for model car builders. This organiza-



tion would benefit all members in that it would provide a means of trading ideas and suggestions on customizing model cars.

Anyone interested in joining can get further details by sending a stamped self-addressed envelope.

Jerry C. Kropp

69 Pleasant St.  
Danbury, Conn.

#### WHY ALL THE FUSS—JUST BUY A PLANE

Dear Sir:

I fail to see all the excitement in the "futuristic" Levacar.

A friend of mine is building a similar machine from a French kit purchased in Canada. It requires the same 90 total horsepower as the theoretical 2000-lb. Levacar proposed by Ford Motor Co. Total weight is only 1200 lbs. but the performance level is higher and the nearly 100 per cent use of thin plywood in the construction has permitted a high per cent payload.

As for performance, the French job is much faster—118 mph at 70 per cent power—and does not require a specially built, glass-smooth, expensive, metal road.

They call this the Jodel Model D-11, and my friend paid \$2450 for the prefab kit which includes everything but the engine. For those who don't care to "do-it-yourself" the D-11 is available factory-built. Incidentally, the factory has been producing several thousand per year now for some time.

There is one further advantage to the Jodel D-11. It does not scream along at 100-plus mph with 1/4-in. ground clearance as does Ford's future Levacar but has a nice comfortable clearance of several thousand feet, which is manually adjustable from within.

I think my friend called his machine an "airplane," though.

Rodney D. Hugelman

Ogden, Utah

**WHAT DO YOU THINK** of the new '60 cars? MOTOR TREND—and other readers—would like to know. So when you've had your first look, why not drop us a line . . . ?



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# Driving Around | WITH THE EDITOR



**I**T WAS MID-JULY. Hot in Los Angeles. From reports, hot everywhere. The phone jangled.

"Walt, Jerry Rideout here."

"Hi, Jerry. How are things at Flint?" (Jerry is Public Relations Director for Buick.)

"Hot. Outside of that, though, we'd like to get your impressions of our new Buick—the '60 model. We think we have a fuel economy story to tell this year. Would you like to come back and test one?"

"Sure. Why not?" And that's how a week later I found myself at the General Motors Proving Ground in Milford, Mich., being introduced to the '60 Buick for the first time.

In the spic-and-span Buick garage, Bob Spinner, the man responsible for car tests there, showed me all types of Buicks: clean and dirty '59s that were still on sustained tests, '59s with features from '60s (to allow them to be driven on the roads with no fear of discovery), and "close-to-production" '60s. None of the cars with '60 bodies was entirely as it would be for production. So, we settled on a Buick that had just returned from a cross-country run (see photo below).

It was a '59 LeSabre four-door hardtop that had been completely rebuilt to '60 specifications—outside of the body

*The oblong "box" seen here is a burette, which measures the exact amount of fuel consumed over a specific distance. This is then converted, by means of a table, to miles per gallon.*

itself. It had been fitted with the new 364 engine, two-throat carburetor, Dynaflo transmission, 3.07:1 rear axle and the new transverse dual exhaust system. For the purpose of checking for fuel economy, it was the same as a '60 car.

I figured the best way we could find out what kind of mileage this car would deliver would be to first check its gas consumption at steady speeds right there on the Proving Grounds. Then I would leave the grounds on a course that would take us over all types of roads and through varied traffic conditions. With this in mind, Forrest Melzer (the mechanic who was to accompany me on the next day's trip) installed a burette and fifth wheel. (The burette is for checking the specific amount of gas you use over a given distance. The fifth wheel reads the exact speed through an electric speedometer.)

With the test equipment installed and the wheels balanced, we were off to one of two Proving Ground straightaways—a two-mile-long, table-top-level concrete roadbed. First came a few runs to "zero in" the burette (to make sure it was free of air bubbles and was giving correct readings) and to warm up the engine and driveline. Next came the tedious task of maintaining perfectly constant throttle pressure at speeds from 80 mph down to 30 mph in increments of 10. Two such constant-speed runs were made in each direction to cross out any error that might have resulted from the wind. If there was more than two per cent difference between two runs in the same direction, another run was made.

The averages we posted speak quite highly of the economy potential of the Buick LeSabre, with the highest reading being 21.38 miles per gallon at a steady 30 mph. Naturally the faster you drive any car, the less mileage you can expect. The Buick is no exception: It got 20.32 mpg at 40 mph, 18.81 at 50, 16.97 at 60, 15.16 at 70 and 13.41 at 80 mph. Even at the higher speeds, that's not bad mileage.

No one drives this way, simply because they wouldn't want to and couldn't find road and traffic conditions to permit it. It does, however, make for good comparisons against other



*Underneath this '59 exterior there was a '60 Buick.*

cars and also shows what you *might* expect from a car in fuel economy. The real test, though, is on the road. That's where we went the next day.

The next morning dawned amidst a heavy downpour, yet the sun managed to poke its heat through leaden skies and intermittent raindrops most of the morning. We planned to make two identical cross-country runs of 161 miles that took in as many varied conditions as possible.

The method Buick has devised to check fuel consumption is highly accurate. They fill each of two portable gas tanks with 16 gallons of fuel. These are weighed and lifted into the trunk of the car. When the run begins, the normal fuel supply from the car's own fuel tank is shut off and the engine is switched over to operate from the portable tanks. After the run is completed, the tanks are removed and reweighed. The difference in weight is then converted into gallons and divided into the distance travelled. This gives the miles per gallon.

Since we wanted our runs to be accurate, we installed the portable tanks and were on our way. On the first run no attempt was made to get good fuel economy. Anytime I felt I had to punch the throttle to get around a slower car or truck I jumped on it and the Buick surged ahead. When I took off from a standstill I mashed the throttle—not in dragstrip style, but enough to get me moving quickly. I kept the car at speeds as close to those posted as possible: 45 and 65 on the open road and at whatever the limit was in cities and towns. This set an average speed of 45.35 for the 161 miles. At this high average speed—and not trying at all for economy—the Buick gave 16.23 mpg.

So that I would be certain to maintain the same average speeds between points and the same overall average speed on the second run, we kept a record of the time we arrived at certain landmarks—just like in a rally. Since I was two minutes longer on the second run, my average speed was one-tenth of a mile per hour slower—or 45.25 instead of 45.35. We also encountered more traffic on the afternoon run, because the intermittent rain had stopped and the shoppers were out.

Even so, by carefully watching throttle pressures, *easing* down on the foot feed when I wanted to increase my speed and trying to maintain a constant speed instead of driving erratically, I upped the mileage to 18.02, or nearly two miles per gallon better.

This all goes to prove two things: whatever mileage you're now getting, you can improve upon it by a constant driving technique; and, the '60 Buick LeSabre gets lots better mileage than a lot of cars on the road today. Most people I know don't gripe too much when they get over 15 miles to the gallon. It's when they drop below that figure that they start to wail.

continued on page 14



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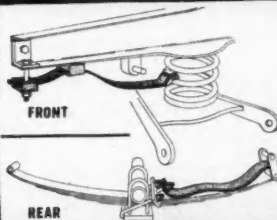
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# Detroit

## NEWS AND VIEWS

by Bill Callahan  
Detroit Editor

### HOW MANY COMPACTS TO BUILD?

Big bugaboo now bugging the Big Three manufacturers on their upcoming compact cars is, "How many to build?"

Industry's analysts are not being over-optimistic with best industry estimates indicating a combined sale of Falcons, Corvairs and Valiants somewhere between 650,000 and 700,000 units, roughly 10 per cent of the total market....

Corvair is expected to take the larger share (250,000) based upon a strong dealer organization, with Falcon and Valiant to split the remainder (200,000 each)....

### WHERE WILL THE BUYERS COME FROM?

Will the new American offerings make a real dent in the import market? How will they affect American Motors and Studebaker? Will the bulk of buyers come from those who normally would have purchased standard size models of the Big Three? These are more questions that will have to remain unanswered for the present.... Importers crow confidently that the smaller American cars will stimulate interest in smaller cars but will not match imports in initial cost and overall operating economy. Corvair, however, with its rear-engine design, larger passenger and luggage space is aimed more directly at the most active imports—Volkswagen and Renault—and could attract buyers from owners of these cars who are somewhat disenchanted with their less generous proportions.... Falcon and Valiant are aimed directly at those Americans who want smaller and more economical cars and might have switched to imports if the smaller US models were not coming....

### HOW WILL THEY AFFECT THE "LITTLE TWO"?

American Motors has the advantage of having tremendous sales impetus that has been building up steadily over the past few years. As President George Romney puts it: "We are not in competition with the Big Three; they are now competing with us." Rambler is not faced with the problem of selling two different types of cars. All its units are "compact" and all are unitized body construction. Dealers do not have to sell one unit against another. Romney has nothing to lose if the Big Three widen the trend to smaller cars—the Big Three have.... Studebaker is in much the same position as American Motors; it has one line of smaller cars, its line has been

established for over a year and has enjoyed good acceptance.... Rambler garnered 5.61 per cent of all sales in the first five months of this year, a gain of 2.49 per cent, over the same period a year ago. Studebaker in five months took 2.56 per cent of the total market, a gain of 1.37 per cent over last year.... Both Studebaker and American Motors have been promoted as cars the country needs. To retain their bigger car markets the Big Three must infer that smaller cars are intended as second cars.... Price differential between the lowest-priced big cars and smaller cars becomes important: Lowest priced Ford 2-dr. sedan \$2219, Plymouth \$2232, and Chevy \$2247. Prices on smaller models have not been announced but are generally rumored to be around \$2000.... (continued on next page)

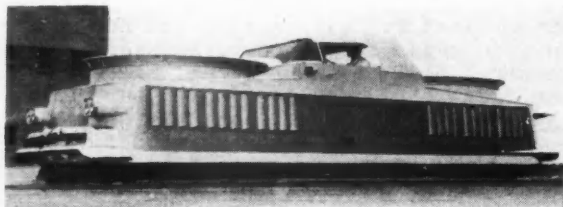
### STRICTLY RUMOR

One American semi-sports line will offer a sliding-type sun roof as extra equipment in its 1960 models. True. And from what we hear, it should make quite a hit.... Use of multi-barreled carburetors is waning and more cars will revert to single, or at most two, barrels in 1960. True. Some makers claim the two-barrel jobs give more satisfactory performance and then there is a question of whether complicated carburetors are not causing road troubles. AAA records show road service calls due to carburetor trouble have increased from 1.3 per cent of all service calls in 1952 to 3.6 per cent in 1957.... American Motors will drop its Ambassador model in 1960. False. This is a fairly recurrent rumor, with no foundation in fact.... Several companies will offer Chrysler-type swivel seats as extra equipment in their own 1960 models. False. The fact that they haven't gone over too well on Chrysler products may have been a deterrent.... A feature of one of the GM lines in 1960 will be a tilttable speedometer that can be adjusted to fit the driver's height. True. Should make for much better readability—something many cars could profit from.... Chrysler is developing a steam engine to be used in future automobiles. False. This one got started when a steam car enthusiast showed his new steam engine to Chrysler engineers. They looked at it—and are still looking at it—but they look at all new developments....

# Detroit

## NEWS AND VIEWS

continued

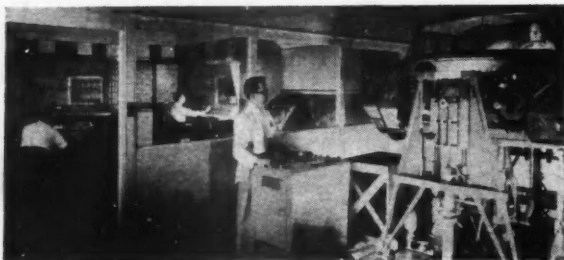
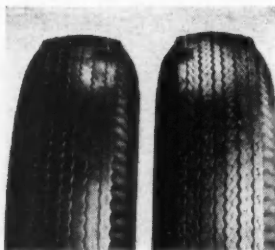


Here's another Curtiss-Wright Air Car, the dual-fan model mentioned as being in the offing in August MT ("Tomorrow's Air Cars"). This is a prototype model that will enter production in November. It's a four-passenger model, powered by a 300-hp engine and will travel over unobstructed terrain at from 6-12 ins. Prototypes of an Air Bus and Air Truck, for passengers and freight, are in development.



What happened to the V6 that you keep hearing about? General Motors put it in a truck. It's a 60-degree vee, making it narrow and compact. It comes in three sizes: 305, 351 and 401 cu. ins. It develops its maximum torque at 1400 rpm, as vs. around 2500 for most V8s. Cost is said to be less than V8s, slightly more than sixes. Life potential is said to be between 100,000 and 200,000 miles. No passenger car plans for the present.

Firestone has announced a new tread compound, X-99, said to practically eliminate squealing on turns, to provide a softer, quieter ride, better traction and much greater tread life than its previous tires. Tire on right was made with X-99; on left with previously used tread material. Right tire shows 15 per cent less wear after same number of miles.



Designing a car by computer may be next, as seen here at GM Tech Center. Various factors relating to a proposed suspension system are fed into the computer, while the body is being put through various gyrations. Answers may eliminate expensive component tests.

## WILL COMPACTS BROADEN THE OVERALL MARKET?

If smaller car sales meet present expectations of 650,000-700,000 in the first year, quotas can be doubled for the second year. They can scarcely be expected to broaden the overall market that quickly, so sales may have to come at the expense of larger cars. This gives credence to present rumors that additional smaller cars are now in development and will be offered by makers currently considered in the medium-size range....1960 will be one of the most confusing yet most constructive years in automotive history. It may result in a complete revamping and a new approach to meet American automotive needs. The buyer no longer can complain that all cars act alike and look alike. The three compacts bear no resemblance to each other and all are strikingly different from the larger car lines in the same family....

## A NEW NAME FOR "COMPACTS"?

Any reader of MT can win the undying gratitude (and maybe more) of Ford, Chrysler or General Motors if he can come up with a short, descriptive adjective, describing a compact car without using those nasty seven letters —c-o-m-p-a-c-t....American Motors, to protect their coining of the word, have gone so far as to register the name, making it appear that the only "compact" is a Rambler. Also, that GM, Ford and Chrysler are following their lead with the name....

## COMPARING THE COMPACTS

In months to come, there will be all sorts of comparisons between various Detroit compacts. One such that should interest all: 250-mile race over 3.8-mile road course at Daytona Beach; new compacts to be compared to comparable-sized imports. Impresario France plans this for Feb. of next year....

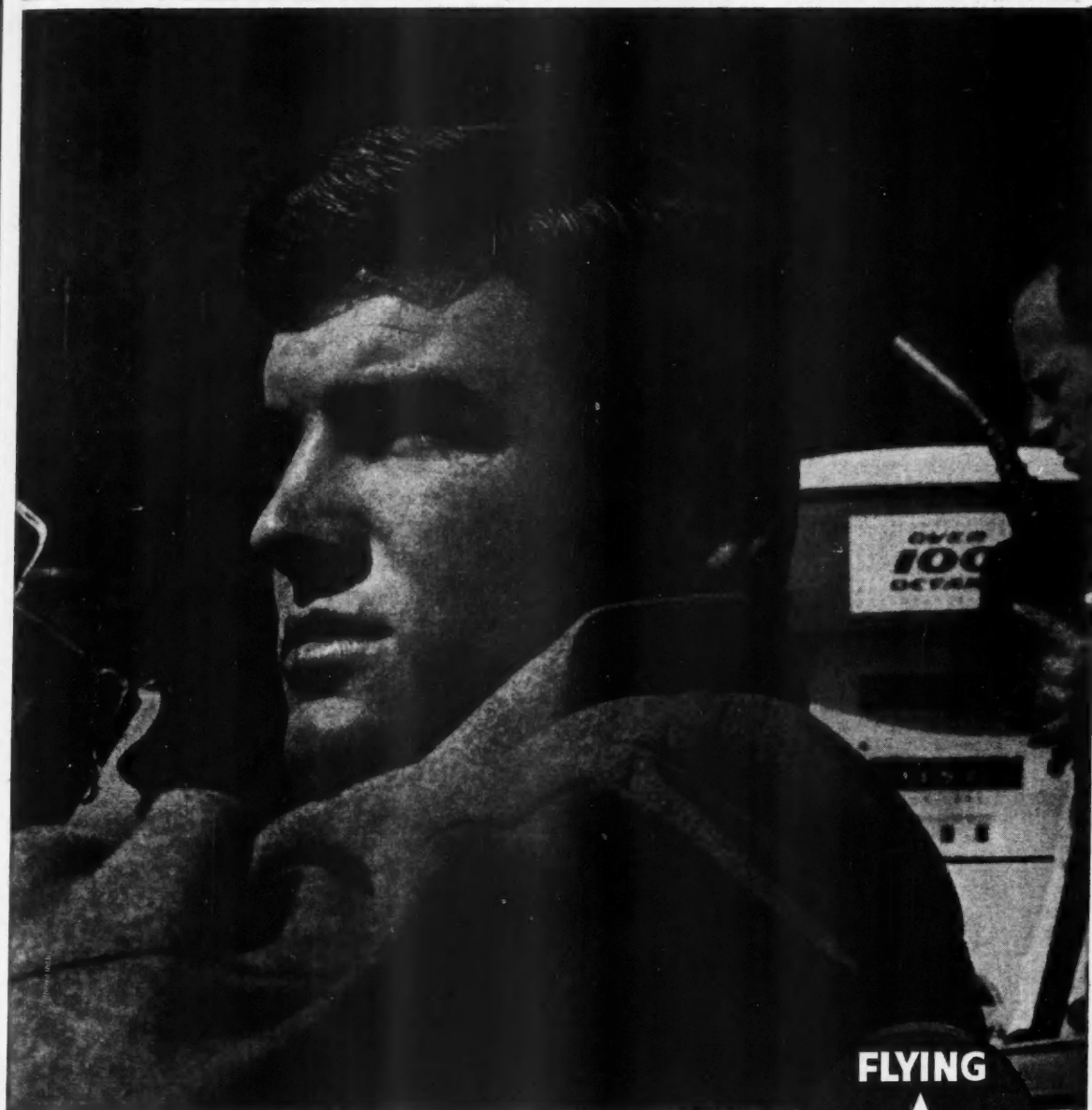
## QUIETER CARS FOR 1960

By "isolation" the engineer refers to studies conducted by all companies to search out and pin-point vibrations and noises, then isolate them so that they are not transmitted to the interior.... If the sound or vibration cannot be completely isolated, insulation comes into play to deaden or dissipate the trouble-causers to a minimum. For this reason the 1960 automobile all down the line will be much quieter than any in the past....

## NEW CAR SALES

Chevy continues to outdistance Ford in sales, while Pontiac consolidates 3rd. Plymouth and Olds are neck-and-neck with Rambler and Buick trailing. Merc 8th, Cad 9th and Dodge 10th....

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MOTOR TREND/OCTOBER 1959 13



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## Driving Around



**LANCIA APPIA**

**I**F YOU CAN'T FIND a car in this issue—or at least *type* of car—that you like, you just don't like cars. But, we believe you'll find one to suit your palate, whether you prefer beer or champagne.

Take the Lancia Appia, for example. Here's a car that's in the "economy car" category, that gets around 30-35 miles to the gallon, yet looks and feels more like a luxury car than anything else.

My first impression of the four-door sedan, loaned to me by Hoffman Motors of Los Angeles, was that I was in a luxury version of the Fiat 1200. Everything about it is quality, from the fixtures to the upholstery, to the way doors "clunk" shut.

The doors open wide, have no pillar but lock against each other, leaving a considerable amount of room for entering or exiting front or rear. (I'd like to see this principle applied to many of Detroit's cars, which seem to be putting a premium on allowable entry space.) You step down over siderails and sit on firm, plushy covered seats that are set fairly high and would profit somewhat by lowering.

The seats are comfortable, but the roughness of the road transmits itself through the suspension. The ride is firm, so that you feel the bad dips instead of

floating over them. To the driver this is good, for it shows up in good cornering ability. Steering is a combination of light and quick, yet it would take longer than the little time I had the car to really get used to it.

The Appia seems to stay up with traffic, though it is no bomb. It has adequate power in all gears—and you have to use them. Shifting through the four gears is easy and the positions on the column are not hard to find. The pedals are small, though I never found myself stepping on my own foot.

The engine (see photo) is one to amaze your friends. It's a 61-cu.-in., deep block V4, with the carburetor off to one side instead of in the V. The distributor is behind and below the carb. Among other things it has a radiator shutter (thermostatically controlled), a shock absorber control, a system for bleeding the brakes, and all the fuses plainly labeled (but in Italian). Power output is 43.5 hp at 4800 rpm; it seems adequate.

In summation, you've probably got \$2892 worth of luxury features in the Appia, but it might be too high a price to pay for an economy car. Personally, I like beer and champagne.

—Walt Woron



Comparative size of the 61-cu.-in. V4 is shown by hand holding spark plug wire. Rated output of the engine is 43.5 hp.



Doors of the Lancia Appia open wide, and lock against each other. With no center pillar there is lots of room for entering.



*wunder-buy!* It's the family car built for fun! Peppy, roomy, unlimited visibility. All-aluminum air-cooled rear engine... can't overheat ever! Superb roadability. Does up to 70 mph. Hoards gas! Up to 50 mpg of regular gas. PRINZ-ly style.

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MOTOR TREND/OCTOBER 1959 15

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# Overseas | NEWS REPORTS



## ENGLAND

After making 250 GTs, Peerless has an improved Phase II model in production, featuring lighter weight plus detail changes. Plans call for 25 per week. . . . A new Elva 1100 features a lighter chassis, lower profile. . . . Riley plans to drop the 2.6. . . . The six-cylinder Vauxhall Velox and Cresta models are improved, but substantially unchanged for '60. . . . A TR-3 was taken to Monza Autodrome by Cambridge students, who broke eight records. One new one was 5000 miles at an average of 102.5 mph. . . . After six years, Lister is withdrawing from motor racing for at least a year. Blamed mostly on changing regulations, subsequent expense. . . . Elva Formula Junior is in regular production. Has BMC A-type engine, four-wheel independent suspension, drum brakes. . . . Rumor is that Jaguar will appear at the Frankfurt Show with improved 2.4 and 3.4 sedans; bigger rear windows, thinner pillars, instruments grouped in front of driver. Also lighter steering for the 3.4. . . .

## ITALY

Siata and Abarth have combined to form Siata-Abarth S.P.A. in Turin. They will collaborate on various high-performance car and equipment projects. . . . Lancia is experimenting with a front-wheel-drive car to fill the gap between the Appia and the Flaminia, and be a replacement for the pre-war Aprilia. Has four-cylinder, water-cooled, 1.5-liter engine developing 70 hp, four-speed gearbox. . . .

## U.S. IMPORT SALES

Sales of imports in the U.S. for the first five months of '59 were higher than all of '57 and took over 9% of the total new car market. If sales continue at this pace for rest of year (which is unlikely) total sales could be over 550,000—vs. 377,548 last year. . . . Volkswagen continues to lead the others with a five-month total of 42,316. The only one even close is Renault with over 30,000. Then comes English Ford line (18,000), Opel, Simca, Fiat, Hillman, Triumph (sedans and sportscars), Vauxhall and Volvo (ranging from 15,000 down to 7800). . . . Biggest changes in big 10 this year over last are Opel—up from 10th—and MG—down from 6th to unranked position. . . .

## GERMAN GRAND PRIX

The two-day German GP, held at wild AVUS circuit, was marked by foul weather, fast lap speeds and accidents (see above). Jean Behra, anxious to repeat his '58 victory and win a permanent place on the Porsche team, went all out, even though the brick surface of the banking was slick as grease. Unfortunately, he went over; and his demise took the edge off Tony Brooks' (Ferrari) record win at 143.598 mph. The next day, said Stirling Moss, "Berlin's AVUS is the worst track in the world. It is dangerous, it is uninteresting and it requires a minimum of driving skill."

## GERMANY

Volkswagen for '60 will incorporate a few improvements. For roadability, transmission is mounted differently and front has stabilizer bar. Also, defroster pipes are bigger, steering wheel hub is recessed. On Ghia models, windshield washers are standard, directionals are self-cancelling, there is more soundproofing. . . . Porsche's new importing network is taking shape. Six independent importer-distributors (including Hoffman Porsche) will now divide up the U.S. market. A factory district service rep will be in each territory. . . . It's highly unlikely that Mercedes will have a racing gas turbine engine ready to go. There is no formula in existence, and no technical basis on which one could be formed. They do have an industrial unit, but as yet it hasn't even been fitted to a truck. . . . Production of Goggomobil rear-engined models is down, but front-engine, rear-drive T-700 is up. Average is 40% over last year. . . .

## CHINA

Communist China is mass producing light trucks and batteries expressly for export. Some trucks are being sent to the Middle East. The batteries, selling at about half competitor's price, show poor quality under examination. . . .



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For people like you who have seriously thought about running their own business, the Bowes "Seal Fast" Corporation has prepared a booklet, "So You Want To Be Your Own Boss!" In it a number of different small businesses you might be interested in are described and compared as to, work, investment and possible profits.

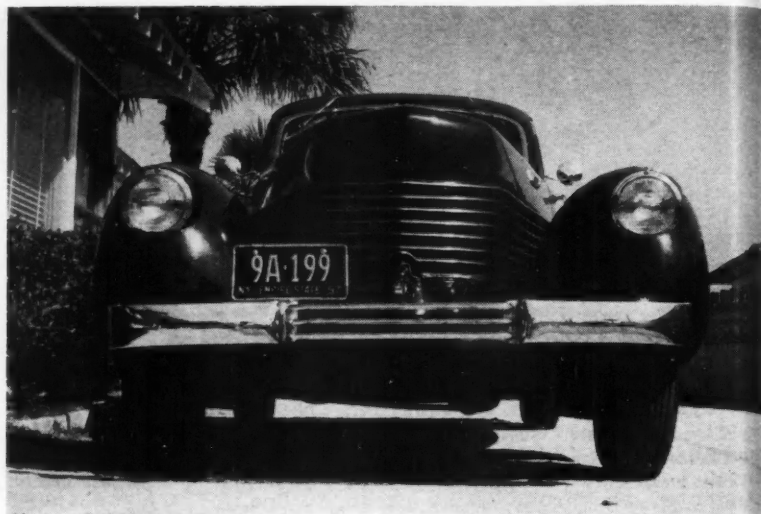
This booklet also tells why Bowes is now offering a few men the chance to become one of their distributors.

If you're not afraid of hard work and can make an investment of about \$8,500 in truck and stock, you may get a chance to become one of these distributors with a "protected" territory.

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*Exterior of the "coffin-nose" Cord has not been altered, except to rechromate all parts that need it and to give the body a dozen coats of red lacquer. Interior has been redone with a reclining seat from a '40 Nash installed in the front compartment to improve comfort. Upholstery is beige Naugabyle.*

## OLD(S) CORD DOES 135 MPH!

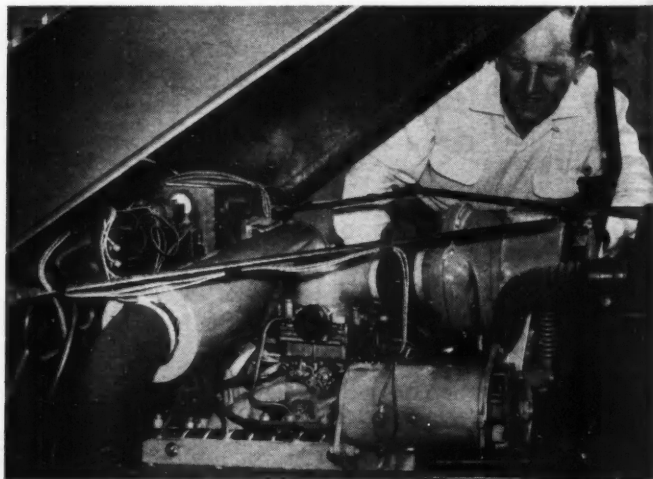
Photo Story by Joe H. Wherry

**A** 135-MPH CORD of vintage '37 would have to have something quite out of the ordinary to make it move that fast—but this one has and does. Capable of doing just over 100 mph when it was in its prime, this particular Cord—owned by Ray Nickel of Albany, N.Y.—has acquired a blown '50 Oldsmobile V8 engine that gets it to 60 mph in less than six seconds.

In 1953 Nickel picked up the ragged

Cord for a song. Restoration was started with removal of the Continental flathead V8 and the front-wheel drive. Running gear was completely dismantled and replaced with '41 Lincoln parts, including a two-speed Columbia rear axle.

The car is not only fast, sharp enough to be a winner in a Concours d'Elegance, but also gives over 17 mpg on long trips. Pretty good for a 22-year-old.



*On top of the '50 Olds V8 went a '53 intake manifold, 4-barrel carb and McCulloch blower, giving 5 lbs. boost. The engine compartment sparkles with bright blue rocker panels and a red firewall. Coupled to the engine is a Hydra-Matic transmission; the selector lever is located on the floor.*





Bobby (left) and Louis Unser (right) have won the rugged Pikes Peak Annual Hill Climb 12 times between them!

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per gallon, plus installation



*Your Choice  
is wide in  
'60*

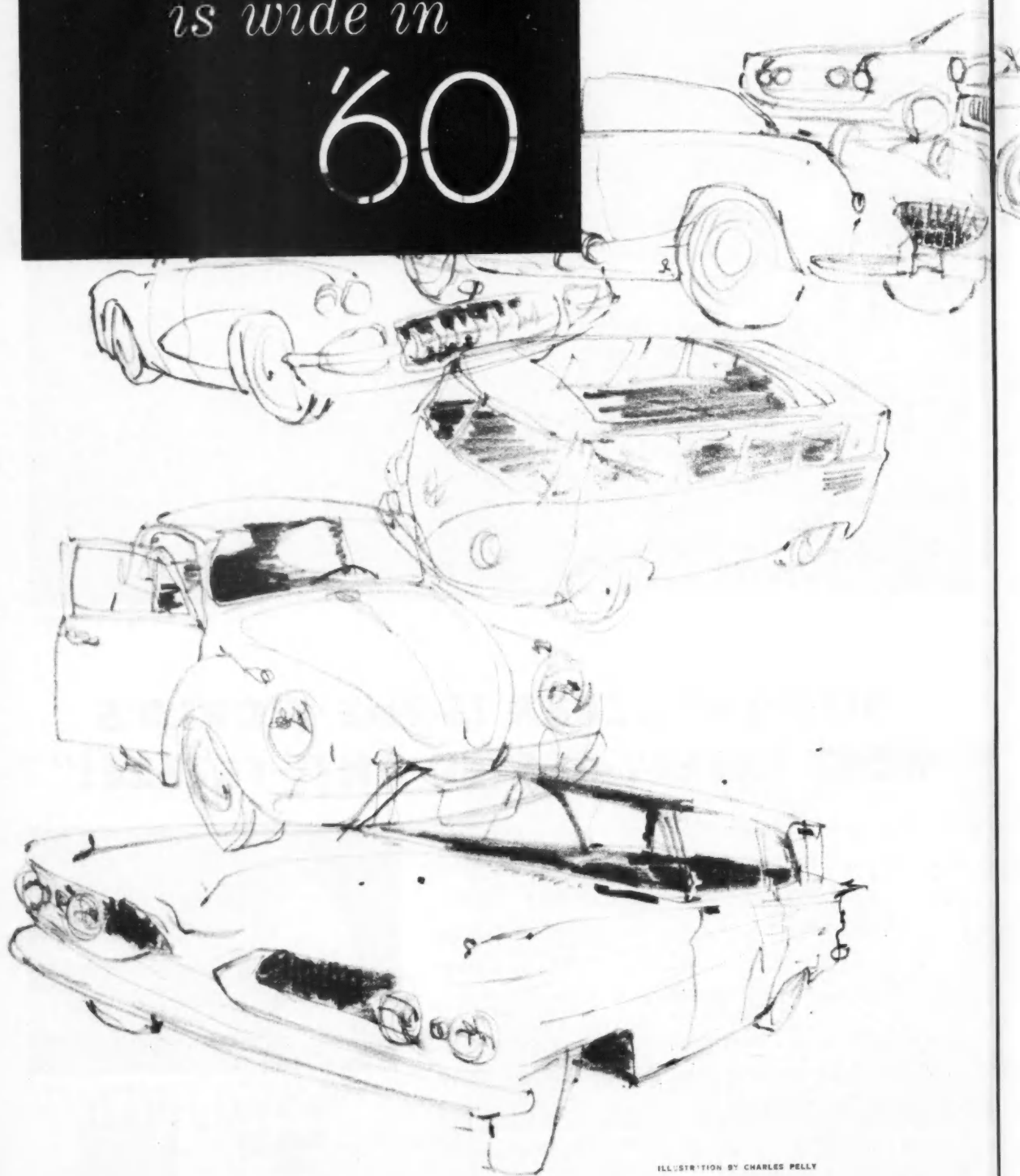
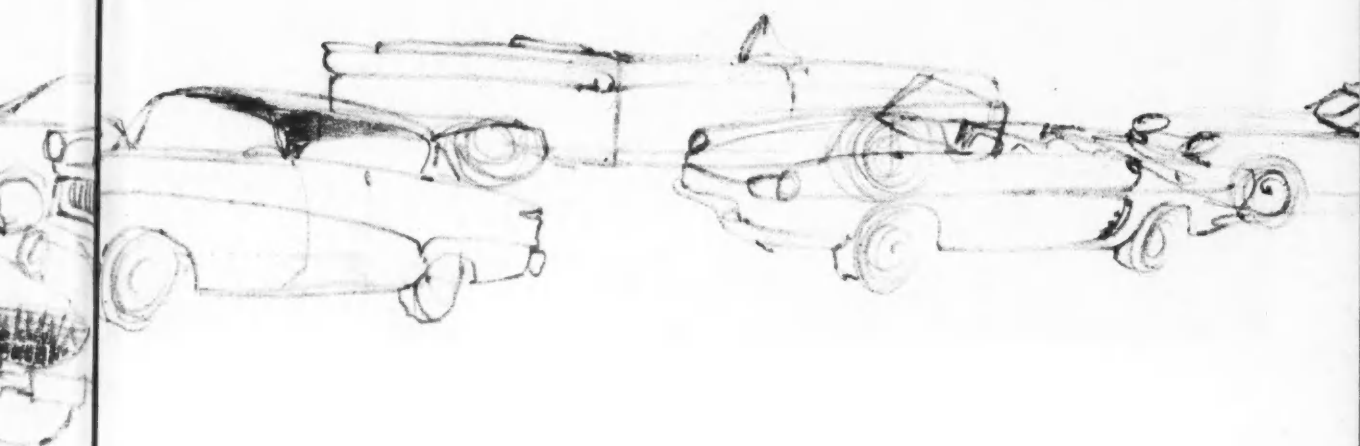


ILLUSTRATION BY CHARLES PELLY



BECAUSE THERE'S A WIDER SELECTION of cars to choose from this year—possibly the widest of any previous year—it pays for you to hesitate before plunging in the direction of your pocketbook. As far as *makes* of cars are concerned, there are now 16 Detroit-built cars, and with the introduction of three new “compact” cars for 1960 this will be upped to 19, not counting the Dodge Dart and Checker Superba. There are now upwards of 80 imports to choose from. And this does not take into account the fact that there are also specific *types* of cars, broadening the selection to an even greater degree.

So, sit back and draw on some of our experience in analyzing, driving and testing these various cars and types of cars. We'll tell you what you might expect from owning and driving the Detroit compact cars, from the imports of the same size, from the *small* imports, from the many different kinds of station wagons, from convertibles and from sportscars of every size and description.

We'll tell you what we've learned about these many cars: their advantages and drawbacks, expected economy, the service situation, their performance, and above all — their practicability, the use to which they can be put by you.—*The Editors.*

## Tired of big cars? Then you'll want to study the new group of

**T**HE COMBINED FORCES of George Romney, Harold Churchill and the many individuals responsible for flooding our streets with cars of a sensible size have had an unquestioned influence on the Big Three manufacturers. There's no doubt that even while many Detroit analysts were discounting the effect of the "foreign car invasion," other more discerning individuals had already seen the handwriting on the wall.

Several years ago (about the time that the present Detroit compact car programs began) the combined sales of Ramblers, Studebakers and all foreign cars was not enough to concern the major manufacturers. Then they started to catch on and they could no longer be ignored as a passing fancy.

Now, Chevrolet, Ford and Chrysler hope to jump onto the crest of this wave and ride it up to whatever height it will go. Some optimistic forecasters are predicting as high as 1.5 to 2 million combined sales for the Corvair, Falcon and Valiant. More realistically, we can probably expect from 500,000 to 750,000 for the first year.

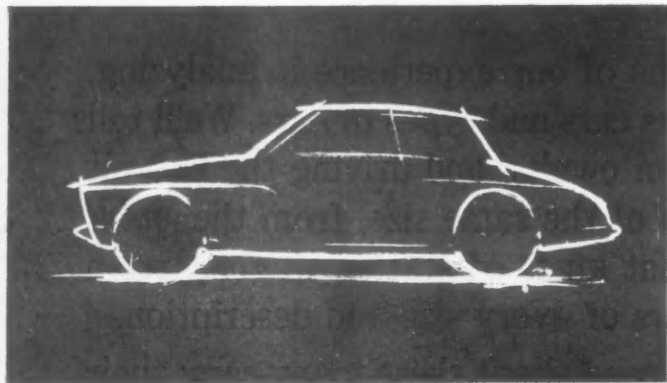
Whatever the total amount of car sales turns out to be, the effect upon the overall market will be great. Studebaker is already

meeting the challenge by expanding their Lark line for 1960 to include a convertible. American Motors will have a four-door, restyled sedan to complement its two-door sedan and wagon in the American line. If all these cars are accepted the way we think they will be, General Motors will follow the Corvair with a stretched-out, plusher, engine-in-the-front car to be marketed through Buick, Oldsmobile and Pontiac. Ford will follow suit with a compact Edsel. One compact car for Chrysler seems to be all they have planned, but another one would not be out of line.

This all adds up to but one thing for the new car buyer: a wider choice of cars from which to select. Then too, the fact that the three new compact cars are all basically different in design and styling indicates more free-wheeling thinking on the part of stylists, engineers and management. This will lead to many new and interesting developments, all calculated to make you want to part with your change.

What do the Detroit compact cars (new and present versions) have that might make them desirable to you? Let's analyze them point by point.

**First of all, their size.** This may not be of any importance to



If Chrysler's new compact car, the Valiant, follows the concepts laid down by Chief Stylist Virgil Exner (see page 30), the over-all shape could very well be something like this conjectural outline.



Ford's new Falcon has a trim, uncluttered appearance, starting in front with a simplified grille, single headlights, a lowered hoodline, a non-wraparound windshield, sculptured sides and no fins.



# DETROIT

## COMPACT CARS

Compact size of new Corvair is shown in dotted line over silhouette of a '59 Chevrolet. Corvair is 31 ins. shorter, 5 ins. lower.

persons living in the country, in small towns or where traffic is light. But, if you're like the majority of drivers, you *have* to put up with lots of traffic, narrow roads and streets, jammed parking facilities and generally little room in which to maneuver. This could make you appreciate these shorter and narrower cars. And don't get the idea that these cars bunch you up into an unusable passenger area, like sardines in a can. As we have pointed out in the past, many of the "compact" cars have just as much—or more—space than the so-called "big" cars. Take a look at the chart on page 29, comparing a Ford Falcon to the '59 Ford, if you don't believe it. It's pretty amazing.

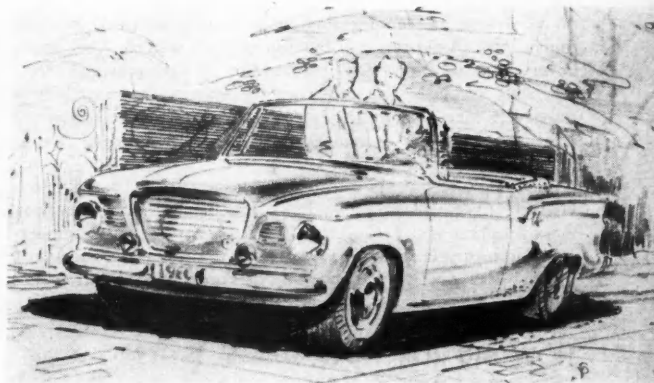
**Second, their maneuverability.** Generally speaking, the smaller a car the easier it is to drive around. By being smaller, they're lighter, making less of a load on the tires. They are just the type of cars to whip in and out of spots you'd never be able to negotiate with larger cars. And all of them will do this without power steering. Present compacts do not offer power steering, nor will the new ones need it. Where you do not have excessive weight on the front end, you do not need a power assist to turn the wheels.

**Third, their economy.** All the Detroit compacts, from the American and Lark, right through the Corvair, Falcon and Valiant will be cheaper to buy and less costly to maintain than their bigger brothers. Their designs are less complicated, making them more economical to produce and to service. Because they are lighter and smaller, they can operate with less powerful engines. Consequently, their gas economy will be greater. Our road tests don't lead us to believe that any of the three new cars will give better mileage than a Lark 6 or American (around 18-24 mpg). Even so, this is some 5-7 mpg better than you can expect in Chevy, Ford and Plymouth V8s.

**Fourth, their very newness.** There seems to be a growing tendency among Americans to want, to almost *need* new things. When those things can be not only new but unique, so much the better. The Corvair offers it in its air-cooled, rear engine. The Valiant will offer it in its tilted-to-one-side six-cyl. engine. All the compact cars are a departure from what Detroit has been offering in recent years. The public has seemed to be asking for this change and these smaller cars; if they really want it, they'll have a wide selection from which to choose.



In addition to American Motors' two-door Rambler American, there will be a new model with four doors. Styling of both cars will remain pretty much as at present. The Rambler will be changed more.



Studebaker's big change in their Lark for '60 will be the addition of a convertible to the line. Reception to the present Lark leads them to believe that drastic changes in styling are not necessary.

# DRIVING FORD'S NEW COMPACT

**First of the new Detroit compacts to enter the fray against American Motors, Studebaker and the imports, the Falcon is a refreshing return to functional styling and engineering.**

*By Steve DaCosta*

**T**HE FIRST OF THE BIG THREE to remove the wraps from the long-awaited new "compact" cars for the press was the Ford Motor Co. Last July we moved out to the Proving Ground (in Dearborn, Mich.) to see and drive this new addition to the Ford family. It was during a month that teemed with developments centering around Detroit's entry into battle against the rapid growth of mostly small imported cars in this country.

Similar in size and general concept to the Rambler and Lark, Ford's tactical approach to the skirmish carries the weight of simmered-down flashiness, guaranteed economy, and realistically comfortable seating space, stressing "cost of ownership" as the major selling point. Not since the days of the Model A (1928-1931) has Ford concentrated on functional styling and engineering as part and parcel of what it thinks the American car-buying public wants. This year, however, in addition to its regular line of high-powered "big" cars (all similarly watered-down in exterior appearance), a refreshing tone of simplicity is to be noted with the advent of what appears to be a manageable and easy-to-care-for brand-new American automobile.

Firsthand technical information came from Ford's Jack Hooven, Executive Engineer in charge of the Falcon development program, and J. C. Jurgenson, Supervisor of the Engineering Administrative Section. Our driving impression was arranged through the courtesy of Dick Judy of Ford Division Public Relations.

## HOW BIG (OR HOW SMALL) IS IT?

Wheelbase of the Falcon is 109.5 ins., with an overall length of 181.1 ins. and width of 70.0 ins. This is exactly 9.5 ins. shorter wheelbase than is used on all 1960 Fords. Overall length on all Ford cars except the Falcon is 213.7 ins., with a standard width of 81.3 ins., yet the Falcon varies in height from its sister cars by only 1/2-in. to two ins. (station wagon).

The Falcon weighs in the neighborhood of 2400 lbs., and is of unitized construction. This chassis-less construction not only reduces the weight of the car to a minimum but improves torsional and rigidity characteristics and provides good door, deck lid and hood fits. Doors incorporate single-arm window regulators, safety locks and 3/16-in. tempered safety glass. Garnish moldings and lower kickpad surfaces are incorporated into the door inner panel design. Rust-resistant galvanized steel is used for rocker panels and other structural members.

Other features to be noted are the aluminum grille which extends to the edge of the fenders and shelters the two single headlights; bolt-on front fenders and sloping hood design; the curved but not full wrap-around windshield; and, the overall uncluttered look that should attract many buyers who are weary of gaudy chrome trim and outlandish tail fins.

## WHAT MAKES IT GO?

The all-new, six-cyl., in-line engine has slightly inclined overhead valves with long pushrods driven off a camshaft set low in the block. The combustion chamber follows the normal "squish-type" shape used on other Ford products. Carburetion for the 144-cu.-in. engine is by a single-throat Holley, mounted on the right side of the engine together with the intake and exhaust manifold, generator and starter. The fuel/air mixture is fed to the four ports through an integrally cast manifold. This led to one question, followed by another one that we've had in the back of our minds for a long time.

The first question was, "How can this manifold be modified if an owner wants to increase and improve breathing, or add more horsepower?"

The engineer smiled ruefully and replied, "Well, that's just it . . ."

So, we went on with our next question. "Talk has been that the Falcon would be using an all-aluminum engine, yet

# CT - THE FALCON



SINCE THIS ISSUE WAS TO GO ON SALE BEFORE THE FALCON'S OFFICIAL RELEASE DATE, FORD ASKED THAT ALL CAR SHOTS BE "BLURRED."

we see that this one is apparently cast iron. What is the reasoning there?"

This was a question they were prepared for. Their answer: "In reality, many so-called aluminum engines do not make as wide a use of aluminum as is often believed. Mostly, the European aluminum engines retain a cast-iron block because of the known stability, precision and long life of cast iron. The Ford Falcon block is cast iron for these reasons.

"One of the main reasons for extensive use of aluminum in an engine," the Ford engineers continued, "is to reduce weight. By taking some new approaches to the foundry art, new design objectives became attainable. In this new Falcon engine, we have achieved simplicity and our difficult weight goal with no loss in durability or reliability. The complete engine weight is only 345.5 lbs."

Bore and stroke of the Falcon engine is  $3\frac{1}{2}$  in. x  $2\frac{1}{2}$  in., resulting in a modern low friction index, expected to be one of the lowest in the industry. All cover plates and bolt holes not absolutely necessary have been eliminated to reduce oil leakage, and manifolding is integral with the cylinder head.

On the left side of the block are the fuel pump, coil and ignition and oil sump dipstick, all easily accessible for servicing. Four main bearings, with replaceable inserts, hold a precision-molded alloy cast-iron crankshaft. Idling speed is 520 rpm, normal oil pressure is 45-55 psi at 2000 rpm. Maximum horsepower (90) is gained at 4400 rpm. Regular fuel recommended.

A 12-volt, 54-plate battery supplies electrical power, with Champion F14-Y spark plugs in the cylinder head. Engine compartment is spacious. To all appearances, it would seem that the manufacturer's claims for high economy and low "cost of ownership" will stand up.

Although the Falcon engine itself does not make extensive use of lightweight aluminum, there are other areas where the weight differential between aluminum and steel or cast iron has been put to use by minimizing the weight of ordinarily heavy components. One such application of aluminum is the flywheel housing.

Driveshaft and axle for the Falcon are of conventional design. The axle, developed specifically for this car, uses unique wheel bearings and gear sets. Rear end ratio is 3.10, coupled



# Ford's New Compact

**continued**

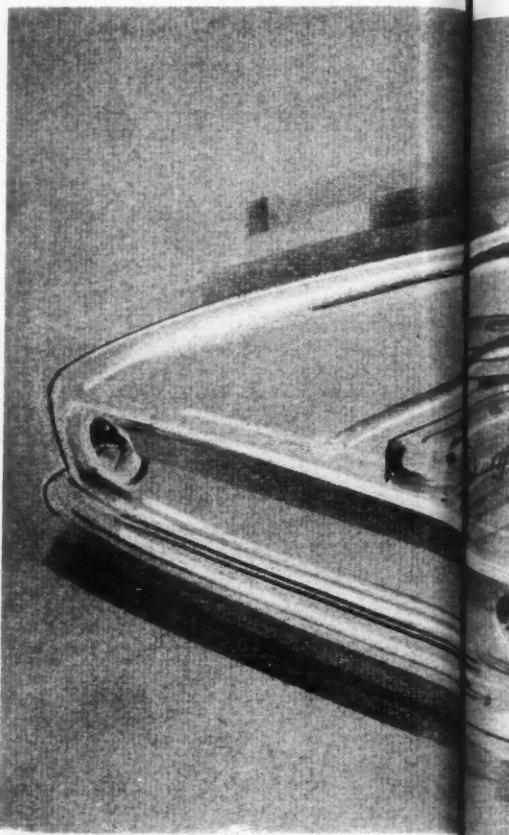
with a transmission having a 3.29 low and 1.75 second gear. This combination with 6.00 tires mounted on 13-in. wheels should provide good performance and fuel economy.

The standard transmission is three-speed, all-synchromesh; reverse gearing is 4.46. The Fordomatic automatic transmission (an option) is the two-speed with 10¼-in. converter. This also incorporates the use of an aluminum case and extension.

## WHAT'S OF INTEREST UNDERNEATH?

Front suspension uses the basic principle of construction as that on the Ford car, but with a different placement of springing and shock absorbers. On the Falcon these components are mounted from the upper arm to a tower in the body structure. The lower arm and stabilizing strut form an A-frame serving to guide the lower part of the spindle as the wheel moves. The stabilizing strut also cushions fore and aft thrust, and an anti-dive factor is designed into the system.

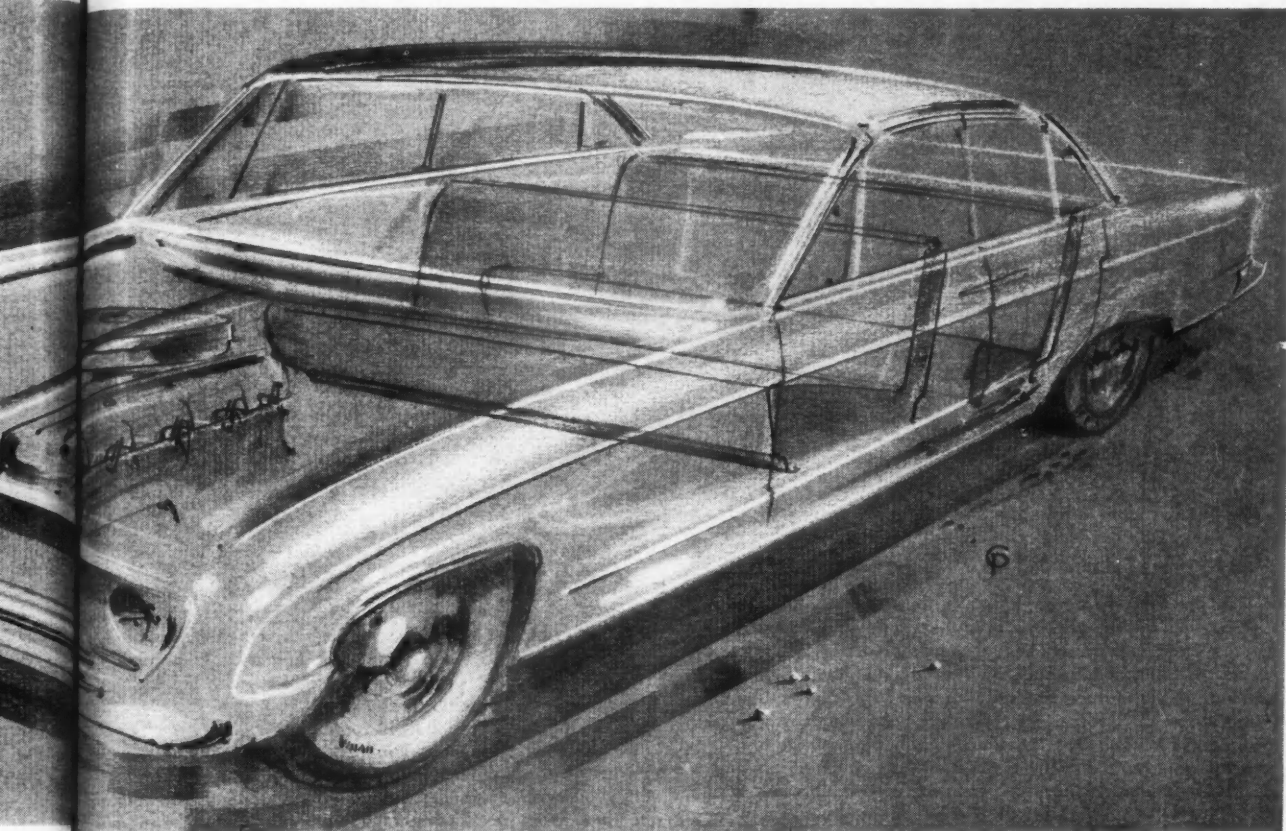
At the rear of the car the suspension is the Hotchkiss type incorporating five-leaf rear springs with a large isolating front



**ABOVE**—The general layout of the Ford Falcon is shown in this drawing. The engine compartment provides good room for servicing the engine and the front suspension can be reached from the top side. Even though the body is of unit construction (integral with the chassis), the front fenders can be detached for repair by removing a few bolts. Seating is ample for six persons and the Falcon's inside proportions are quite generous.

**LEFT**—This close-up of the new Ford Falcon six engine gives some indications as to the good service accessibility. The oil filter neck is right on top of the valve cover. The large air cleaner is the dry, replaceable unit type. On the left side of the engine are the plugs, distributor and fuel pump. On the right side are the single-throat carburetor and integrally cast intake manifold, plus exhaust manifold, generator, starter; about 90 hp.





eye bushing, angle-mounted shocks and an axle insulator to minimize road noise transfer. An 8½-in.-diameter pot-type clutch has been designed to provide good engagement characteristics and long life expectancy.

Steering was developed expressly for the Falcon but is a conventional design utilizing an overall ratio of 27 to 1. Some of the "big car" characteristics have been incorporated, including the use of a concentric steering column and pendant brake and clutch pedals. Steering wheel is 17 ins. in diameter and of the deep-dish safety type similar to that used in recent years on Ford cars.

Brakes are nine ins. in diameter with an effective area of 114.3 sq. ins. While no power assist is provided, Ford claims they are the next thing to power brakes and have 30 less pieces to service than the present-type duo-servo brakes in use today. Brake lining is of molded asbestos and is riveted to the shoes.

### WHAT IS THE INTERIOR LIKE?

The Falcon interior was designed to accommodate the above-average person measuring 5 ft. 10 ins., weighing 160 lbs., with enough front seat adjustment (manual) to suit taller and shorter individuals. It has the interior roominess of many of the larger American-built cars and considerably more realism than most of the imports.

Sufficient width to seat three passengers in both front and rear was accomplished by minimizing door thicknesses, and headroom and legroom are ample. The roof shape, with a two-directional crown and minimum length, has allowed the elimination of roof supports, permitting a lower line with no sacrifice of headroom. In the four-door model, the center pillar has been moved forward to permit easy entry to the rear seat, while in the two-door a wide door opening extends almost to the front edge of the rear seat cushion.

Trim cover materials used are of excellent quality and are subjected to extensive laboratory and functional tests before installation. Body cloth, on doors and panels, is of nylon and viscose yarns, which has good recovery from stretching. On door panels this material is electronically bonded. Foam polyurethane is used in all front cushions for softness.

Instruments and switches are well placed and easily visible through the triangular spoked steering wheel. These include a speedometer, temperature and fuel indicators, with warning lights for oil and battery. Other switches are for headlights, panel lighting and accessories.

Luggage space of the Falcon has a volume of 24.5 cu. ft., about one-fifth larger than the average of most popular imports, yet due to the large "greenhouse"-type rear window and a minimum of rear overhang, the trim appearance of the car is not made to suffer.

*continued*



continued

## WHAT IS IT LIKE TO DRIVE THE FALCON?

The first reaction we got to the car on driving it was that it doesn't feel like a small car. You *expect* it to be small, but because there is good room in all directions—for head, for feet and legs, for shoulders and hips—you don't get the cramped feeling you get in many imports. The wheel sits at a good angle, you can see well over the down-sloping hood through the wide windshield and out the rear, unhindered by blind spots.

In driving the Falcon from the Ford Proving Ground garage to the track and for the few hours of acquaintanceship with it, we were impressed with the almost complete lack of noise. Of course, you can hear the engine, but they did not skimp on soundproofing nor on the sound insulation between moving parts. And the quietness is almost equalled by the superb ride. This wasn't only on the smooth acceleration strips, but over man-made cobblestones, rutty roads, streetcar tracks and at speed around a banked concrete oval.

One ramp with a straight 12-in. drop-off on the other end looked too rugged for us to take without damaging the car. "Go ahead," the Ford test driver urged. We figured he must know what he was doing so approached it at 30 mph, went up and sort of *flew* off the other end. Honest, it was as if we had taken a fairly bad bump in the road—no more.

Though steering is a trifle heavy it does not need power assist. It is a bit stiffer than real lightweights, but nowhere near as heavy as the normal-sized cars without power steering. If you live in country where you have to drive on lots of high crown roads you'll be happy to know that the Falcon has an amazing resistance to them. On the worst such at the Proving Ground (the worst we've seen *anywhere*) we had to keep only the normal amount of pressure on the wheel to keep the car from wanting to wander toward the low side.

Steering is far from quick, taking a full five turns lock-to-lock (which is how they got away from needing power steering). Yet, you can drive the car hard into turns—whether you mean to or unintentionally go into one too fast—and come out with no more than a bit less rubber. The car will lean quite a bit, all four wheels will slide quite a bit, but by allowing it to go and steering a new line you'll get through with no trouble. In ordinary driving, you need never concern yourself, for the car handles just about as good as any other.

It's meant to be a comfortable riding passenger car—and it is. We whipped it around the Proving Ground handling course just to see what it would do under fast driving conditions and can truthfully say that we were impressed; we frankly did not expect it to handle as well as it does.

We did not think it fair to judge this prototype on its acceleration merits for several reasons: it was a very early model scheduled for improvement of engine and gearbox before final production, had been driven by countless drivers, needed a tune-up, and was equipped with two-speed automatic transmission that was functioning poorly. A production car with the manual three-speed gearbox would be a fairer car to judge. This we will do in our full-scale road test, to come later.

We *did* take it around the high-speed oval at cruising speeds and then top speed. The feeling and response at normal speeds were good, with no wander, little wind buffeting and no excessive noise. From speeds of 50-60 mph it went right on up to an indicated 80 mph with little increase in noise; in fact, it was still possible to talk at just slightly above conversational tones—and with both front windows down.

If you live in a city like Pittsburgh or San Francisco you'll be able to take the hills without too much worry. We drove the Falcon up a 17 per cent grade, stopped midway, pulled on the cane-type emergency brake and shut off the engine. The brake held, the engine restarted easily and the car took off up the hill again as soon as we put the transmission selector in low. We repeated the same thing on the other side of the hill, a 30 per cent grade, then turned around and came back up the opposite way. No strain of any kind.

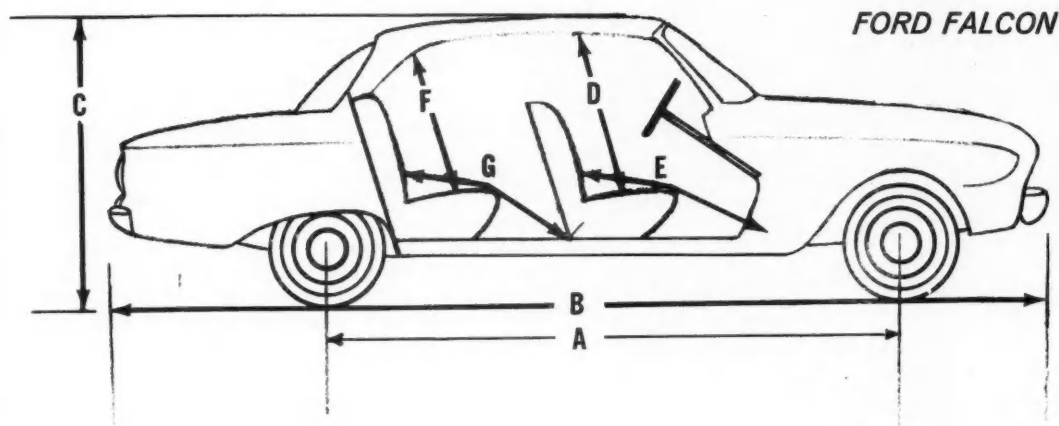
Normal brake testing was conducted with admirable results. On our usual number of speed-to-zero stops all wheels appeared to exert equal stopping force, with no resultant fade. Pedal "feel" was solid, with no appreciable extra leg power needed. (Power assist is not offered, nor needed.)

## HAVE THEY MADE THE GRADE?

In a familiarization preview, Ford Motor Co. states that the Falcon program was initiated with the following definite objectives: "Light Weight, Low Cost, Full Size (six passengers), Low Upkeep, Performance equivalent to the standard Ford 6, and High Economy." Of these six objectives, only three were in firm evidence during the MOTOR TREND visit. Remaining to be developed—and/or announced—were the final answers to the claims of Performance, High Economy (naturally affected by increased power and performance) and Low Cost.

In any case, it appears certain that solutions are to be found. With the headway established by actual production of a "compact" laboratory machine it is a strong possibility that the Ford Falcon will attract thousands of buyers in the compact car market with a tasteful, thoughtfully designed automobile. /MT

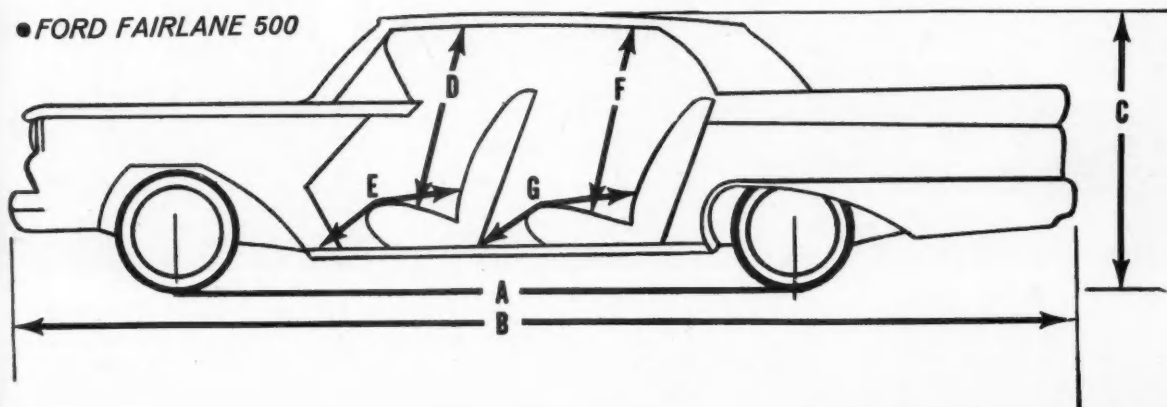
# LOOK AT THIS STARTLING COMPARISON OF THE "SMALL" FALCON WITH A "BIG" '59 FORD!



FORD FALCON

	'60 Ford Falcon	'59 Ford Fairlane 500
<b>A—Wheelbase</b>	<b>109.5 ins.</b>	<b>118.0 ins.</b>
<b>B—Overall Length</b>	<b>181.1</b>	<b>208.0</b>
<b>C—Overall Height</b>	<b>54.5</b>	<b>56.0</b>
<b>D—Front Seat Headroom</b>	<b>38.9</b>	<b>33.5</b>
<b>E—Front Seat Legroom</b>	<b>44.6</b>	<b>42.7</b>
<b>F—Rear Seat Headroom</b>	<b>37.3</b>	<b>33.3</b>
<b>G—Rear Seat Legroom</b>	<b>40.1</b>	<b>40.3</b>
<b>Overall Width</b>	<b>70.0</b>	<b>76.6</b>
<b>Minimum Road Clearance</b>	<b>5.9</b>	<b>6.0</b>
<b>Front Hiproom</b>	<b>57.1</b>	<b>60.4</b>
<b>Rear Hiproom</b>	<b>57.0</b>	<b>60.8</b>

● FORD FAIRLANE 500



# The Man Behind the



**TO KNOW A MAN'S PHILOSOPHY** is to know what he will do. Probably only true to the more observant, yet if a man's thinking is strong enough, it will be felt. Let's see how this might work if we apply it to Virgil Exner, Chief Stylist for the Chrysler Corp.

In January, 1952 he presented an SAE paper on "International Styling and the Chrysler K-310." (The K-310, you'll recall, was one of the first of many dream cars to come out of Chrysler.) Exner stated, "... an automobile cannot be properly styled unless it is first conceived as a whole unit. The theme must be a single one to which all components are intimately related ..." And speaking specifically of the K-310 ... "The

hood, roof, and rear deck were carefully proportioned to emphasize the fact that this car employs a powerful front-located engine ..." (See photo A).

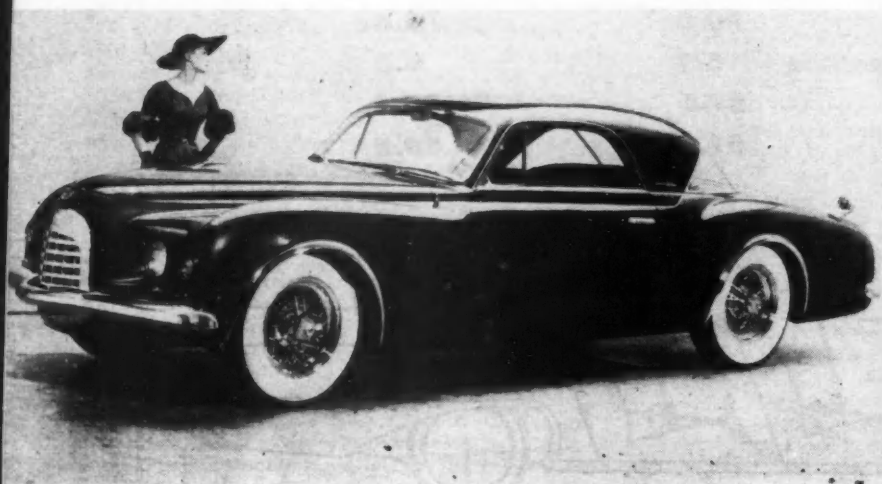
About wheels he had this to say: "The wheel, one of man's oldest and most vital inventions, is also one of the most beautiful designs. It is, likewise, the essence of functional automotive design. Why attempt to hide it?" Could this apply to the Valiant, as it has to the Falcon (B) and Flight Sweep (C), both of which were Chrysler dream cars produced in '57?

In further describing the wheels and rear deck of the K-310, Exner said, "The wheel shape has been accentuated by the wheel openings and the tire impression on the deck lid." Will they carry this through on the Valiant, as on the Flight Sweep deck (D)?

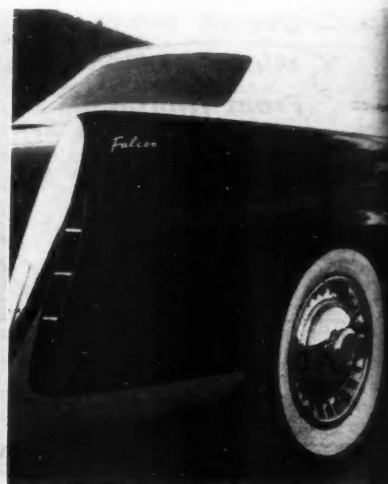
As to the Valiant's front end, could it be guided by Exner's philosophy when he spoke of the K-310's front (and also of the Falcon dream car of '57—photo E)? "The front end provided a familiar and difficult problem—that of identifying the car without recourse to excessive decorative treatment."

All conjecture, of course, but piece enough such things together and you just *might* have a good idea of the styling of the new Valiant.

*Editor's Note: See page 32 for a story on the group behind the Valiant and "The Mystery of Midland Ave."*



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# VALIANT

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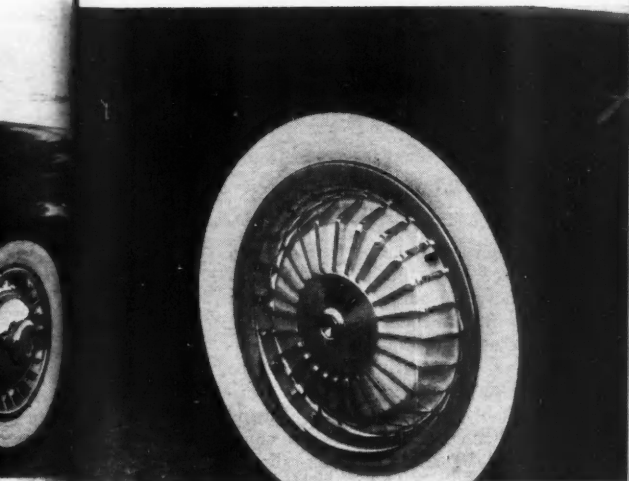
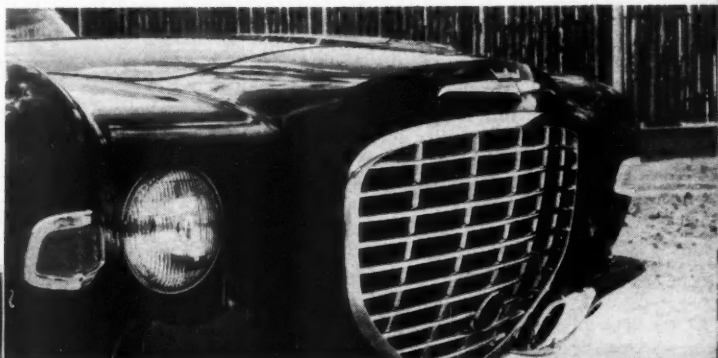
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A LOOK AT  
WHAT HE HAS STYLED  
IN THE PAST  
MIGHT REVEAL WHAT HE  
HAS DONE  
WITH CHRYSLER'S  
SOON-TO-BE-ANNOUNCED  
SMALL CAR.



Virgil M. Exner  
Chief Stylist  
Chrysler Corporation



C

D

NOW IT CAN BE TOLD: THE STORY OF THE MEN AND IDEAS IN THE CLOSELY GUARDED SECRET—THE "MYSTERY OF MIDLAND AVENUE."

## The Group Behind

**W**HEN MARKET RESEARCH INDICATED sufficient demand for a smaller, lighter American-made car to warrant our entry into this field," says Virgil Exner, Chief Stylist for Chrysler Corp., "our next problem was to decide what type of car to build.

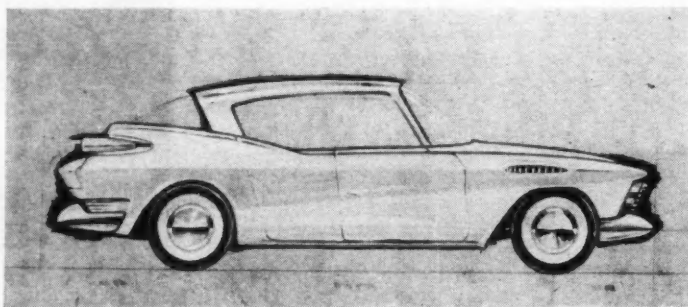
"First, we felt that a scaled-down version of our larger cars would be unacceptable to the public. The car had to be smaller and lighter without sacrificing passenger and luggage space to too great a degree. It had to have an individuality and distinctive styling. It could not look boxy or stubby. Therefore, chopping off front and rear overhang, squeezing in the sides and dropping the roofline was not the answer.

"The car had to be new from stem to stern and embody a new concept of styling. What we were aiming at was a car that would provide all the economy and handling advantages attributed to the smaller, lighter cars and yet not look small or tiny from a distance, although it was to be actually smaller up close. This sounds quite difficult, and it was, but we feel that in the Valiant we have accomplished just that."

MOTOR TREND is not at liberty to reveal details of the Valiant at this time, but we agree that Mr. Exner has achieved that seemingly impossible feat of creating a car that has distinctive styling, is lower, shorter and narrower than standard lines, but still does not look stubby, boxy or diminutive when viewed from a distance. We feel MT readers will agree with us when the car is released for sale late in October or early November.

The story behind the development of the Valiant has elements of cloak-and-dagger drama. In August, 1957 a group of approximately 100 designers, draftsmen, engineers and mechanics were completely segregated from the regular design and engineering staff and put to work in a separate building providing ultra-secrecy and security. The Valiant project was started under the code designation of Project A-901. Nerve center of the operation was 403 Midland Ave., in a trim, brick building that soon became known among the initiate as the "Mystery of Midland Avenue."

**HEADING THE OVERALL SETUP** was R. M. (Bob) Sinclair (shown above with staff). His mission was to develop a car that would meet the overall concept. In addition to good looks, smaller overall dimensions, distinctive styling, etc., this car would have to provide good handling, econ-



*Original A-901 had fins, missed "slight European flair," was dropped.*

omy, roadability and relatively high performance. It was not to be a record breaker in the top speed ranges, but it would have to show a high degree of get-up-and-go in normal cruising ranges and in the inevitable swirl away from a traffic light.

First job was to decide on chassis components such as suspension, transmission and engine. Choice, of course, would be the proved Chrysler torsion bar suspension in front with semi-elliptic springs in the rear. Inevitably, Americans would demand a choice of manually-operated and automatic transmissions. Third, for economy there would be an in-line, six-cylinder, overhead-valve engine. All these units would have to be comfortably contained in a low-silhouette, unitized body.

When it comes to meeting such requirements all companies in the industry have a large pool of previously proved components from which to draw. However, the big job facing Bob Sinclair was to develop a combination of these mechanical components which could be comfortably contained within the

by Bill Callahan Detroit Editor

# the VALIANT



exterior design concept outlined by Exner and top management. These required a new engine and transmission layout.

**THE ENGINE**, according to best reports, is a 170-cu.-in. displacement six laid over 30 degrees from vertical to the right to permit a lower hood line. The transmission in manual jobs is tilted 30 degrees to the left from vertical to provide more convenient location of the control lever. These developments also made it possible to use a lower tunnel in the center of the passenger compartment. This problem was not too pressing because the unit body construction in which the frame becomes an integral part of the structure eliminates deep cross-members in the understructure.

**THE MECHANICAL COMPONENTS**, assembled from proved prototypes, but designed particularly to fit Valiant dimensions, were then turned over to Proving Ground personnel for further test and evaluation. Chrysler claims that components in the Valiant have been subjected to more than four million miles of testing, while assembled prototypes have been given more than 250,000 miles of endurance testing. These tests have been made on Chrysler Proving Grounds at Chelsea, Mich. and in camouflaged vehicles operated throughout the United States.

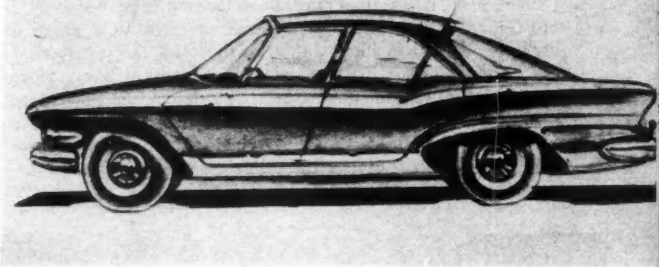
**OVERALL APPEARANCE IS NEXT**, what with dimensions and general chassis concept established. This also is influenced by the philosophy behind the car and its adaptation to styling modifications in later models. For this reason, the first step is basic sketches. As can be seen in one sketch here, the original A-901 car was adorned with rather lavish fins. This fell far short of Exner's dream of a car with "distinctive individuality and a slight European flare." So that design died a-borning.

Next try was a little closer to the final Valiant. The second

sketch shows a trend away from the traditional Chrysler upswept fins. Lines are softer and the design does have a distinctive European flavor. This design probably got as far as  $\frac{3}{8}$ th-scale clay size before it, too, was discarded.

Normal procedure is to start with sketches which, if interesting, are built in  $\frac{3}{8}$ th-scale models to provide a three-dimensional concept. If the  $\frac{3}{8}$ th clay seems to warrant further study the design is translated into full-size clay models. At this point, modifications can be made even as stylistsicker. When the almost-final design has been accepted the full-size clay is translated into a fiberglass model which represents the final design quite closely.

In the case of the Valiant, no fewer than five full-size clay models were developed and discarded before a final decision on design could be reached. But in design and styling, as in engineering, research is a constant part of the job so that even though the design features in the new Valiant blend smoothly



*Second sketch was closer: dropped fins, added European flavor.*

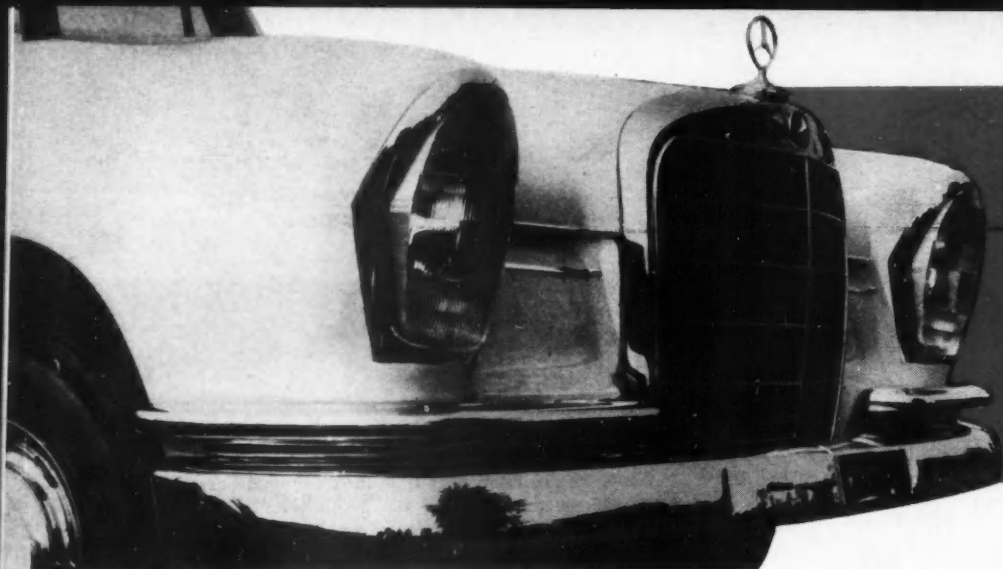
into the overall, they may have been created long, long ago.

Once mechanical and styling concepts have been approved they must be wedded to actual completed models to be tested. This is the period when security boys sweat. So, even at the Chrysler security-conscious Proving Grounds the new units were carefully screened from other work forces. Canvas tents were erected within the garages and completed cars were operated on the test course only under the most stringent restrictions. Test cars were not permitted to pass marker signs along the test course where such roads were visible from surrounding highways. The Valiant, up to now, has been one of the industry's best kept secrets.

It has been many, many years since any engineering groups have been given the honor of starting with a clean piece of paper to build a car from scratch. This has happened within the past few years at Ford, Chevrolet and Chrysler. The public will greatly benefit from this new trend.

/MT





**I**T'S A LOT EASIER to talk about a "compact" car than it is to define one. Any imported car with a soft roof or fast lines used to be called a sportscar, and any other import was known as an economy car. This was untrue then, and it's even less true today. There is a third category called the "imported compact car."

You can choose anything from the three-cylinder DKW to the six-cylinder English Ford Zephyr; luxury features (and price) range from the French Panhard to the Italian Lancia Appia; power from the 12-hp Citroën 2-CV to the 210-hp 3.4 Jaguar saloon; engine and drive combinations from the two-stroke, front-engine, front-wheel-drive Saab, to the manifold-injected Mercedes-Benz 220-SE. You can have a meticulously detailed Japanese Toyopet, or a lushly appointed high-speed touring car like the English Rover, with disc brakes to match ... a car in every price range to appeal to every purchaser.

Practicality is an important consideration, and economy is too. Generally, the imported compact car sells in a range of just under \$2000 to about \$4500 or more for the luxury models. Since these cars are designed for overseas driving, where fuel is high-priced and low-octane, they deliver anywhere from 15-35 mpg on regular grade American fuel. In return for this, the driver generally sacrifices performance and luggage space; however, this is not always the case.

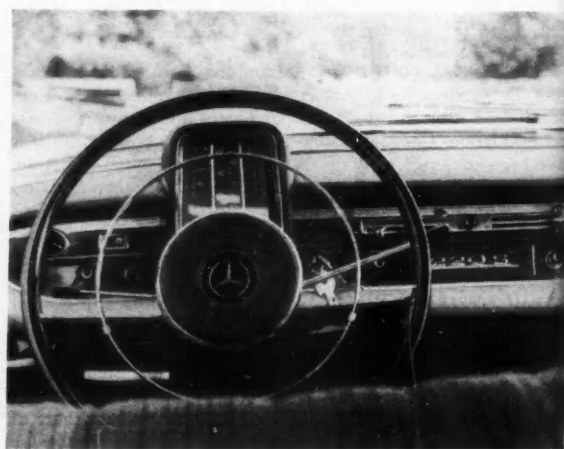
This may seem like a concession in the practicality department, but surprisingly, most compact cars have as much and sometimes more space, *for people*, than the big cars do. The difference in size is in overhang—front and rear—some of which is trunk space and some of which is just fins. And, this compactness is the charm of the car; it gives a nimble and quick steering feel you can never get from bigness, and some compact imports actually handle like sportscars. Fact is, some are.

Fortunately, for the imports, the laws of economics know no national barriers. A better product that costs less in the long run will always be the best buy, regardless of where it's made, and the foreign manufacturers have a lot of experience building quality compact cars at a very reasonable price. The nimble import, regardless of what Detroit does, has made an impression that will last a long time to come, and overseas manufacturers are not standing still in design development, expanded service facilities and reasonably priced parts. Automatic transmissions—almost a sales necessity for the mass American market—are already available on some compact imports (Humber, for example), and many other lower-priced cars will soon be similarly equipped with low-power-loss automatics, such as the Hobbs transmission.

As with the American product, research and market demands keep making compact imports better and better, too.—**Len Griffing**



*Modest fins and minor headlight and grille changes give the Mercedes 220-S modern lines while retaining familiar features.*



*New two-spoke wheel with padded center typifies emphasis on safety; dash, visors, controls are padded, handles are recessed.*

Looking for a practical-size  
car with an overseas flair?  
Then consider

Your Choice  
is wide in  
**60**

## IMPORTED COMPACTS

### Driving the NEW MERCEDES 220-S

by Gunther Molter

**T**HE NEW MERCEDES-BENZ 220-S for 1960 is one of the few production cars that tell you its designers have had experience in racing car design. This impression extends from the driver's sitting position to the roadholding and cornering ability of the car.

In comparison with the old 220-S the new model is much improved. The body is more modern, but is still classic; it is lower, with a longer rear end and mild fins; it has a different radiator grille and new headlights adapted from the racing version of the 300-SL; luggage capacity is increased by half.

The smartly styled seat is well positioned, as in first-class European sportscars. The driver has excellent control, with the steering wheel in a comfortable position. This allows you to corner fast—and comfortably. Roadholding has been improved over the former 220-S and is now almost comparable to the 300-SL roadster.

I drove the car on different types of roads: Autobahn, normal cross-country highways and old German cobblestone roads in the rain. A wet cobblestone road with numerous turns was the best test track for roadholding we could find. First, I made a very fast Autobahn turn at full speed (about 105 mph). At this speed there

was no noticeable lurching, and very little correction was required. There was a feeling of safety and perfect control. The next turn was as fast but went downhill over quite smooth cobblestones. The impression was the same—much improved.

With the old 220-S, you could not go as fast, and you had to work the steering wheel to keep the rear end of the car from breaking away. I took a bad, wet-road bend so fast that Artur Keser, publicity director of Daimler-Benz, said, "Now you have really reached its limit!" But I had to make very few steering wheel corrections, ending with just a very little counter-steering (turning the front wheels into the direction of skid) as I fed a bit of throttle.

As on the 300-SL roadster's rear suspension, there is a compensating spring which is mounted above the center of rotation of the low-pivot rear axle. This third spring does not increase the suspension rates, but acts to keep both rear wheels in the same plane despite rough roads or high side-loading. Front suspension is independent with two wishbones per wheel, and coil springs with additional rubber springs and torsion bar.

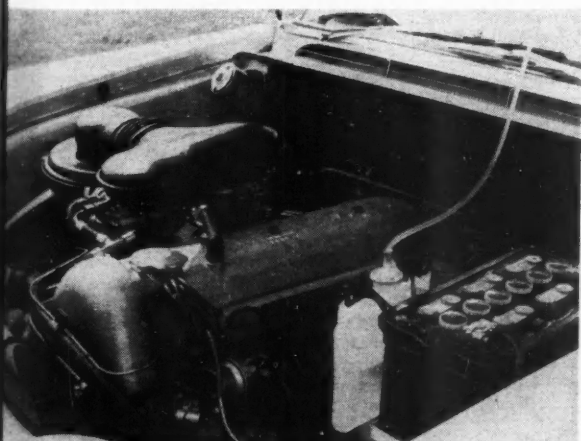
The engine and gearbox are mounted in unit with the front suspension. This tri-part unit is suspended on the frame with rubber and has two leaf spring struts in front, providing a rigid unit that is nonetheless insulated from the passengers. The shock absorbers are now more closely mounted to the wheel for improved dampening.

The 220-S has power-assisted brakes, with the total braking effect being similar to sportscars. With this car you can maintain sportscar average speeds.

Acceleration is good, and with its happy third gear ratio, this car drives like a sportscar. Maximum speeds through the gears are 28, 47, 75 and 105 mph. For those who want more acceleration, the 220-SE is available with indirect fuel injection (into the manifold), which provides a better torque curve. An automatic clutch is available.

The in-line six engine has two larger downdraft carburetors, improved valving, and a more spirited overhead camshaft which gives a better torque curve. Power output is now 124 hp at 5200 rpm for the 220-S, and 134 hp for the injected 220-SE. The SE engine now has straight intake tubes instead of the curved ones used on the old engine. Flexibility of the power range is very good, so that one can drive the car most of the time in 4th gear, but in city traffic 3rd gear is usually top.

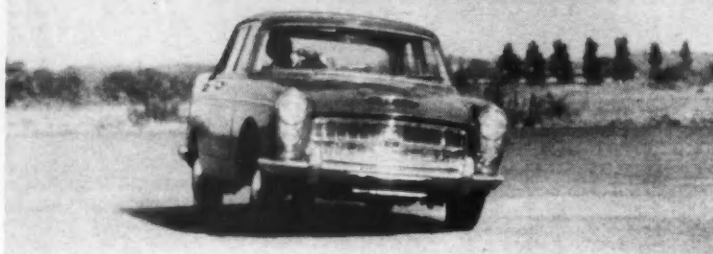
For me, the new 220-S (or SE) is one of Europe's best production cars. Its performance is sportscar-like, without the usual hard ride. The 220-S has riding comfort that reaches the standard of American cars, yet it far surpasses them in roadholding.



Larger dual carburetion and different cam contours give the overhead cam six a better torque curve and 124 hp at 5200 rpm.

# What it's like to drive

## Austin A-99



**THIS IS THE BEST AUSTIN** ever built; the best looking, the fastest, and the safest. It accelerates swiftly up to 100 mph, handles quite well, and has powerful servo-assisted disc brakes.

The engine has been enlarged to 178 cu. ins. by increasing the bore. Twin SUs provide better gas flow, and bigger displacement provides spirited low-speed performance. New rating is 112 hp at 4750 rpm (an increase of 22 per cent); torque is 165 lbs.-ft. at 2400 rpm (up 14 per cent).

Using direct top gear, the A-99 will accelerate from 40 to 80 mph in under 23 secs., or, if one uses the gearbox, in under 20 secs.

The new five-speed transmission unit has single-disc clutch, three-speed manual gearbox with Borg-Warner over-drive on top two, and Porsche-type splitting synchro. Brakes are vacuum-servo Lockheeds with 10.8-in. discs at front and 10-in. drums at the rear. Up to about .5g deceleration (16 ft./sec./sec., or 11 mph/sec./sec.), braking load is 65/35, front and rear. Hard braking produces even more inequity, but a simple spring-loaded shut-down valve holds steady pressure in the rear lines. Excess pressure is diverted to the front, making rear brakes less prone to lock up.

Steering is by cam and peg. Pivots and levers are stiffer than on previous models, and the steering box is bolted to the structure in two planes. This eliminates deflections that give a vagueness in fast cornering.

The biggest surprise is the handling. Stabilizer bars front and rear reduce sway, and without special tire pressures or hard damping I took the A-99 around an airfield maintaining big slip angles on all four wheels. On the 1.7-mile triangular circuit, with one right-angle turn and two near-hairpins, I averaged 66 mph. The whole unit-body car feels taut and completely stable; steering is light, responsive, accurate and free from kickback. The ride is comfortable, and effectively dampened against road noise.

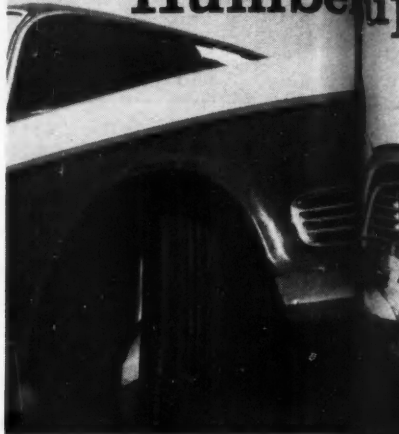
On the debit side, it was difficult to tell when overdrive engaged, and with throttle control it will sometimes engage when not wanted. The total car price in the U.S. is about \$3240 (about \$3400 with automatic gearbox).

Farina's styling has produced a sleek, handsome car which will not date quickly, is easy to enter, and gives really generous headroom front and rear. And there's every bit of width that can be compatible with pleasurable driving in crowded cities.

—Gordon Wilkins



## Humber



**THE FIRST TIME I DROVE** a Humber Super Snipe was at Riverside Raceway, rented for the day by the British Automobile Manufacturers Ass'n so that the American press could drive and evaluate their products. The three things that impressed me most at the time were the compactness of the car—lots of room on a short wheelbase; the absolutely lush appointments—prime hide seats and trim, and hand-rubbed walnut appointments; and its automatic gearbox.

Borg-Warner makes the fluid transmission, which is coupled to the 112-hp, 3.25 x 3.25, 179.5-cu.-in., in-line six. Compression ratio is 7.5:1; it is somewhat of a surprise to find that this plush saloon takes regular fuel.

Performance is not flashing, since the car is heavy, the engine is small, and the automatic gearbox is always there to consume about 15 per cent of the applied power. Once rolling, however, the car goes—the engineers gave plenty of power at the top of the rpm range. With the windows rolled up, you get an *absolutely quiet* 80 mph. And there's more on tap.

Suspension is quite conventional: A-frames and coil springs front, semi-elliptic and live axle rear. Ride is extremely comfortable, and cornering—once learned—is surprisingly good. The car will not accept high inertia loadings, and when applied the Super Snipe leans, then leans again with the side loadings. However, we turned quite fast by inflating the tires to 30 psi, and applying steering lock gradually. This way, the loading is gentle, and the springs, shocks and tires take it without protest. Sharp curves are negotiated beautifully under power.

Perhaps a brief word about the Englishman's ideas on a quality high-speed touring car would be in order here. Four people (plus



# IMPORTED COMPACTS

## Super Snipe



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luggage) are seated comfortably, and the whole car is designed around the concept of a high sustained speed, with roadholding and braking to match engine power. Never is there wind noise, road growl, or any sacrifice of passenger or driver ease. Under these conditions, our Humber was a 70-75-mph automobile.

But comfort is where the Super Snipe scores. To quote our editor: "It's amazing, but Rootes has accomplished the comfort and much of the plushness that's in the Daimler, and at less than half the price. Once you get used to the lack of out-and-out dig, you don't miss it—you just relax and enjoy it. My wife commented, 'It doesn't even feel as if you're in a car. It's more like being in a comfortable chair at home.' And I agree."

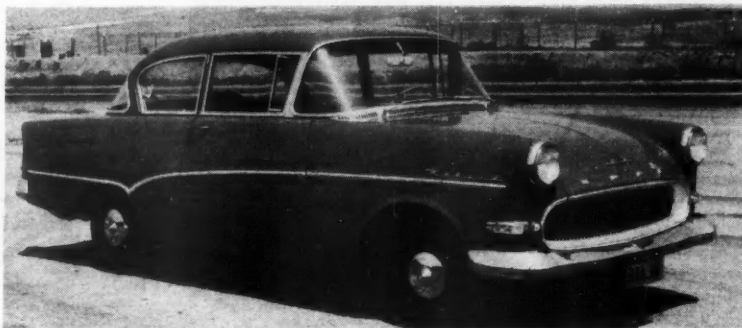
The writer agrees too, with one qualification. He honestly doesn't own a chair that comfortable.

—Len Griffing



*Left: Humber sacrifices some performance for luxury, still cruises at smooth, silent 80 mph. Automatic gearbox is standard. Interior is carefully finished in leather and hand-rubbed walnut. Rear passengers have pull-down trays done in walnut, excellent chrome.*

*Right: Opel has very simple straightforward instrumentation and fascia panel: gauges are functional, all small controls are clearly marked black-on-white exactly what each knob does. There is room for four big adults, and enough power for a fair performance.*



## Opel Olympia

**O**NE OF THE TOP IMPORTS" in this country is a tag that certainly can be put on the Opel of Germany. Here is a straightforward machine that requires no engineering license for operation; just climb in and drive it away.

In this day of the space-age instrument panel that contains everything except instruments, it is a genuine pleasure to sit behind the Opel's wheel. The key slot is marked IGN-START, wipers are labeled WIPERS, lights are labeled LIGHTS, and choke says clearly black-on-white CHOKE.

Thinking back to the first time we drove one of the earliest Opels to be imported, we recall two things that detracted from the pleasures of Opel motoring. One, the car wallowed under spirited cornering; two, the seats were uncomfortable. Driving the latest model, we find that both of these deficiencies have been corrected, and several other points are worthy of accolade.

Most every car has an "it's nice, but why didn't they . . ." department. The boys at the Opel plant have done their

best to out-guess you. The gearbox is synchromeshed in all three speeds; real nice when you don't quite miss that traffic light. The rear view mirror is rubber braced; eliminates vibration shudder.

Despite only 1500cc (91-cu.-in.) displacement, the ohv straight-four engine moves the car briskly without strain. There is no difficulty fairing into fast-moving freeway traffic. Acceleration is fair-to-good up to slightly above legal speed. At low speed, the engine produces enough torque to eliminate that extra downshift if you're not in a hurry to roar away. (A new 1700cc engine is optionally available.)

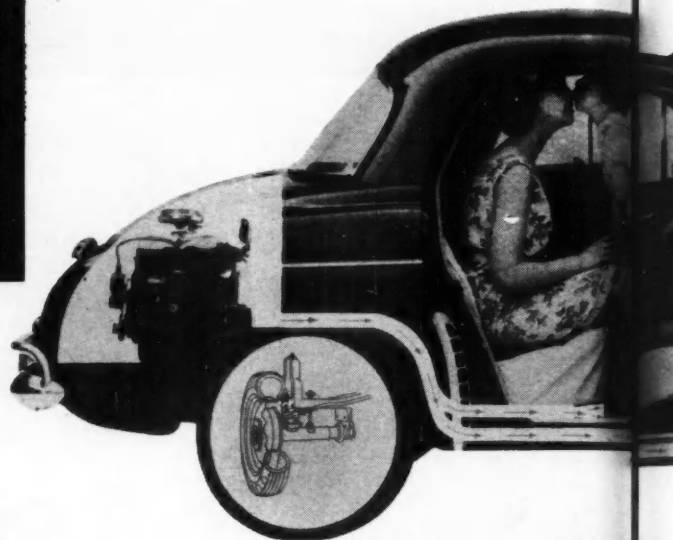
As a departure from the usual Detroit-oriented marketing practice, the advertised price (\$1958 p.o.e. New York) includes most of the extras—heater-defroster, clock, signal lights and lighter. The West Coast price is up slightly. Seems high at first, but if you're looking for sensible transportation in a well-appointed car, try an Opel. You may like it as much as we did.

—Len Griffing





Your Choice  
is wide in  
'60



## IMPORTED ECONOMY CARS

**W**HEN EVERYTHING IS REDUCED to basic truth, in all but very few instances the final purchase of the small import is predicated upon economy. In fact, again returning to basics, this is the best reason to buy one.

What makes a car an economy car? Well, it's a combination of three factors, which together comprise total cost of ownership: original cost, operating costs and depreciation. Let's take a look at how the small imports stack up on these points.

For economy alone, it's hard to beat a car that you can buy for under \$1500 p.o.e., such as the Morris 1000 (\$1495) or Ford's Anglia (\$1464). For just a little more, the Volkswagen (\$1545) or the Renault Dauphine (\$1645) are good buys. Perhaps the VW, more than any other car, set the stage for the reputation this class of car enjoys for durability, longevity and low depreciation, though the stylish Dauphine, through aggressive selling and good service at a fair price, is presenting a challenge. The buyer, however, is the one who gains from this international rivalry. Six countries—England, Holland, Japan, Germany, Italy and France—market small cars ranging from the \$2316 Riley 1.5 through semi-sports models like the Rapier and the Saab to the \$1345 Renault 4-CV.

Once purchased, your small import will average anywhere from 25 to 45 miles to a gallon of fuel. As with any import, maintenance is preventative rather than restorative—periodic service and replacement *before* parts and assemblies fail. This is difficult for the American motorist to understand, which accounts in some degree to the reputation small cars have for high wear rates; however, a good portion of the blame falls on the driver, not the manufacturer. But then, it is good business for the manufacturer to suit the product to the market, not vice versa.

Driving technique with small-bore engines is another thing that the American must learn. Big American engines can be

lugged at low speed; small engines have to be helped with intelligent gearbox use. A small engine doesn't produce much torque, and almost every small hill, corner and acceleration condition will require a downshift. The American practice of "dump it into high gear as soon as possible" is outright injurious to the small engine, and is costly. Many miles are run in the lower gears, which suits the engine just fine despite the engine noise. A lot of this noise is the result of sound deadening being left out to save both weight and money.

Then there's the problem of limitations. A small car is small and generally has a relatively low cruising and top speed. As such, its use will be limited. If you want to tour, you should buy a touring car; if you want to haul big loads, buy a truck. A small car is neither.

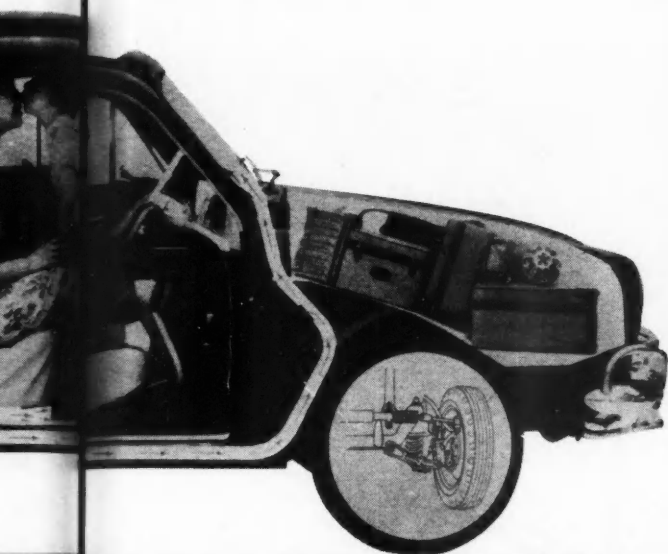
Engine and suspension are designed to pull and carry light loads. To guarantee that load limit is not exceeded, there is a physical limitation on the space to put things. Normal loading is two to four people, with light luggage. Of course, some ingenious people do succeed in effecting an overload by means of trailers and roof racks.

It can be questioned whether the small car is actually as small as we think it is. Watch a six-footer get in and out of a big Detroit. He slams his head, skins his knees and contorts like a belly dancer. In some models of small cars there seems to be actually more room for people to make dignified entry and exit.

And when you decide to trade, depreciation percentage will be proportional to other cars, but the base figure will be lower. It costs you fewer dollars.

If initial cost and operating economy are big factors in your transportation, test-drive a small import. You'll discover that the traffic really isn't as thick as you thought it was, and driving is fun. Perhaps it's time you started shifting for yourself.

—Len Griffing

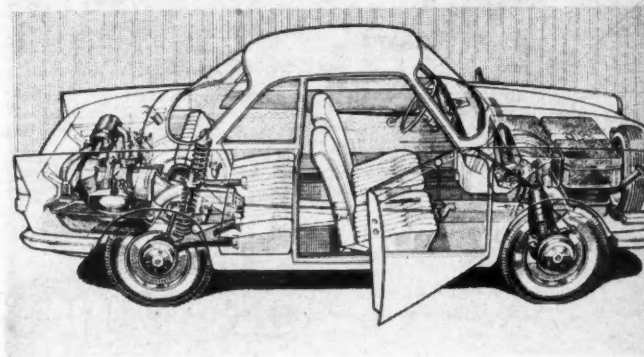


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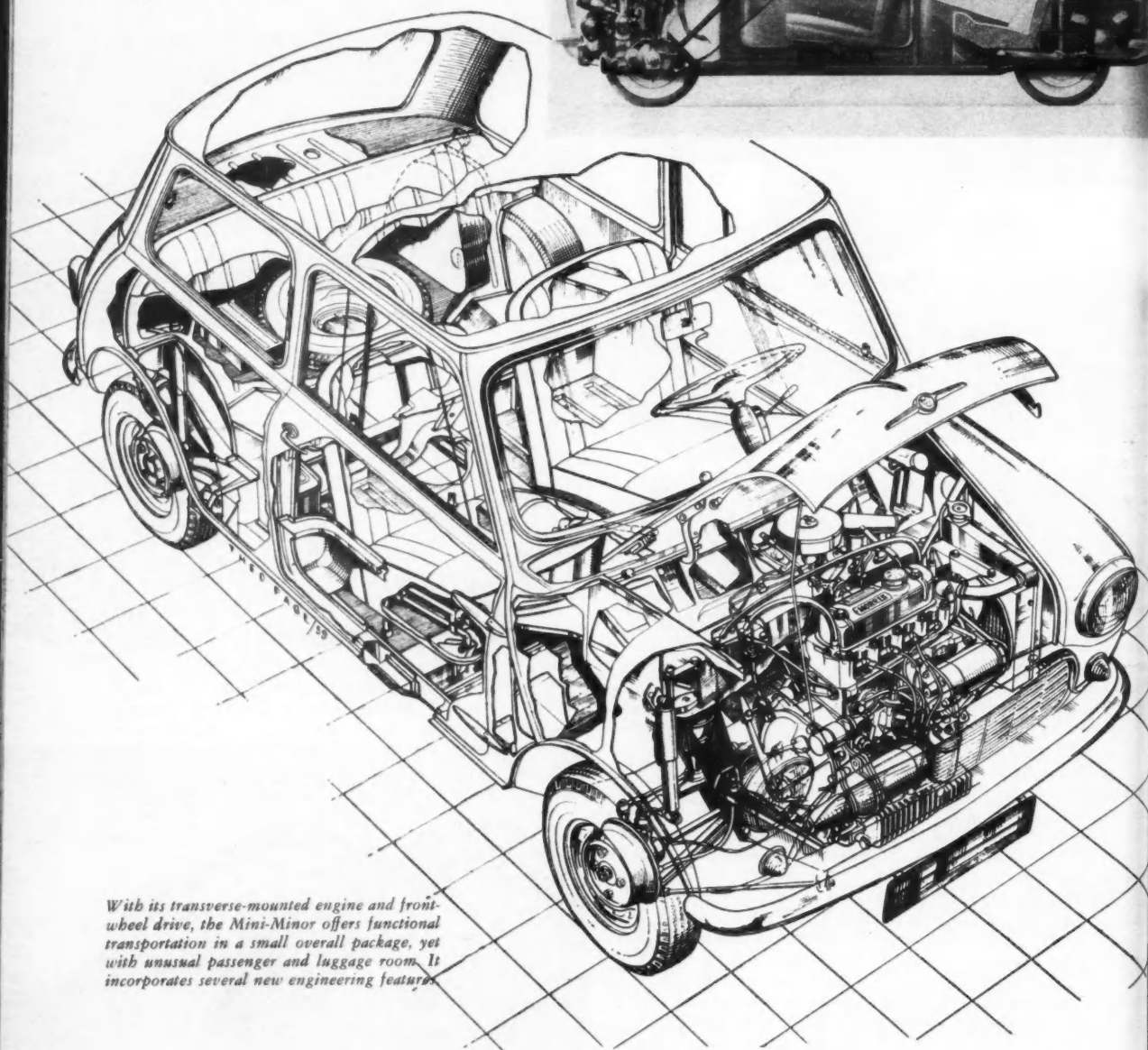
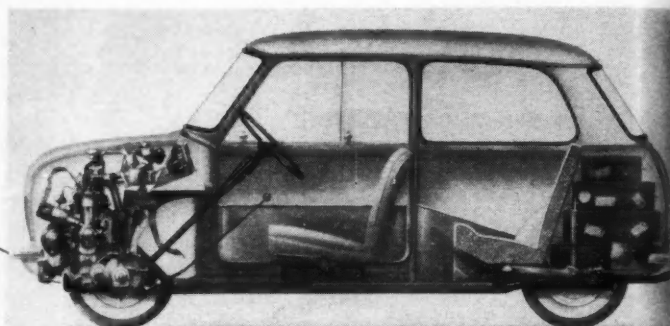
From top to bottom—

NSU's Prinz is a rear-engine two-door with small capacity (583cc) engine. Despite big-bore, short-stroke design, engine peaks (20 hp) at 4600 rpm. This means either low wear rates, or lots more power on tap for interested owner who is willing to twist engine tighter. Ford's Anglia is conservative front-engine, rear-drive sedan with very reliable 1172cc engine developing 36 hp at 4500 rpm. It cruises comfortably at 60 mph, yields many mpg. BMW is a very pretty car, with lines like a sports model and four-wheel independent suspension. Straightforward body lines provide headroom for four, spacious luggage area. East Germany's Wartburg does not reflect the quality craftsmanship of Mercedes or Porsche, but it does provide room for four people and front-wheel drive is capable of handling all kinds of rough open-country terrain.



# *driving* **BMC's**

**IMPORTED  
ECONOMY CARS**  
continued

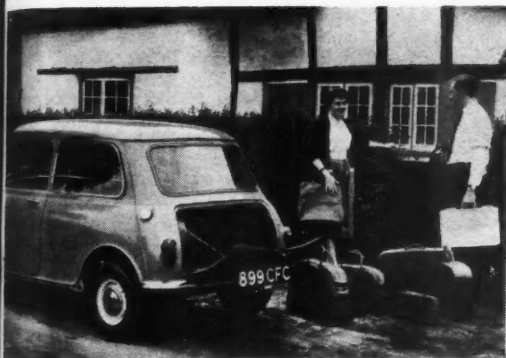


*With its transverse-mounted engine and front-wheel drive, the Mini-Minor offers functional transportation in a small overall package, yet with unusual passenger and luggage room. It incorporates several new engineering features.*

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# MINI-MINOR



Hatch at rear drops, providing easy access to baggage space and extra area for bulky cargo.



Flat-out cornering produces little lean; control of front-drive understeer is excellent.

by Gordon Wilkins

**W**ITH ITS TINY WHEELS (10-in. diameter) stuck right out on the four corners it looks broad-shouldered, muscular and sure-footed. Any resemblance to any other automobile you ever saw is purely coincidental. This is BMC's baby bomb—the creation of Alex Issigonis, one of Europe's most uninhibited automobile engineers, who was given an absolutely free hand in its design.

The body of the Mini-Minor (also to be called the Austin Seven) is the simplest, lightest and cheapest envelope that could be evolved to enclose four full-size seats, a lot of luggage space, a four-cylinder engine and transmission in a package only 10 ft. long. It turns in a circle of less than 30 ft. and will park in a space only 1½ ft. longer than its own length. The car weighs only 1260 lbs., ready to roll.

After tests with two-cylinder engines mounted front and rear, a front-mounted, four-cylinder water-cooled engine was selected as offering the best compromise of smoothness, power, roadholding, steering characteristics and space conservation.

The in-line four is basically the BMC A-type ohv engine, but a shorter stroke gives 848cc (52 cu. ins.) displacement. With a compression ratio of 8.3 to 1, the engine develops 37 bhp at 5500 rpm.

For space-saving reasons the engine is mounted transversely across the front, and the gears are put below it, in the sump. Engine, gearbox and final front-wheel-drive form a single unit with a common oil supply.

The Mini-Minor has new cone-shaped rubber springs, loaded by levers connected to the suspension arms. These springs offer rising resistance with increasing deflection—a desirable characteristic difficult to obtain simply with ordinary springs.

The body incorporates many new ideas in quick, low-cost production. Main elements are the roof, nose assembly and windshield frame, the sides, tail panel and floor. These are all flanged outward and welded together down the flanges.

With two big, wide doors there's no problem about getting into the Mini-Minor. Each of the four seats will hold a full-size adult, with reasonable legroom and headroom. Interior storage space is astonishing—there's a wide parcel shelf, large compartments in each door, receptacles alongside each rear seat, a big shelf at the rear, plus more space under the rear seat. There's also the trunk which, with its horizontal spare tire and recessed battery, allows room for several suitcases.

A round circular housing in the center of the parcel shelf contains a speedometer and fuel gauge, with warning lights for generator, oil pressure and high headlight beam. The steering wheel, set on a column nearer vertical than usual, accommodates drivers of widely varying girth and arm reach. Pedals are well spaced to suit big feet, with plenty of space between.

Windows in doors slide, and when both panes are pushed back, provide draft-free ventilation. Rear quarter windows are fixed on standard models, hinged on deluxe. Upholstery and headliner are in plastic.

The first few minutes at the wheel are full of surprises. The engine is quiet, smooth, willing. You can rev it high, or slam the throttle open at 10 miles an hour and let it slog away in top gear without judder or thump.

Acceleration is beyond all expectations for a low-cost minicar like this. On my first drive in the car I had no time to take my own

figures, but testers tell me that prototypes have been doing 0-30 mph in 7.1 secs., 0-40 in 12.9, 0-50 in 18 and 0-60 in 26. Top gear cruising speed is an effortless 65-70 mph. You can do 22 mph in first, 38 in second, 58 in third. Top three speeds are synchromeshed.

Cornering absolutely flat out, the roll was not excessive and the control was excellent. Like a good front-drive car it responds to throttle, drifting out, widening the circle if you press on to the limits of tire adhesion. If you cut the throttle, it tightens the circle again. The tail stays put at all times; I never managed to get it jumping or sliding.

Brakes too are quite surprising—smooth, light and grab-free. There are leading and trailing shoes at front and rear, but as on the new big BMC cars, there is a cut-off valve which limits maximum pressure in the rear brake lines, and so helps prevent their locking under emergency braking.

The ride is taut, level and beautifully damped, even when hitting deep chuckholes at high speed. And rear seat ride is almost as good as in front.

Road testing reveals two outstanding technical achievements: the mounting of the engine, and rubber shock insulation in the universal drive joints. Rubber engine mountings are quite stiff vertically, but flexible in allowing the engine to swing about the crankshaft axis. This movement is restrained by two radius arms—one above the aluminum clutch housing, and the other, the exhaust pipe!

The Mini-Minor represents functional simplicity at its best. With a probable U.S. price of around \$1400, it could prove to be a popular paradox—a small car in which big people can be comfortable.



# testing SIMCA ELYSEE



## IMPORTED ECONOMY CARS continued

**O**UR TEST CAR has a very interesting history. Usually we receive cars that are new—sometimes too new to make a fair appraisal. This one is an old veteran. It had been thrashed by many testers before us, one of whom used it to demonstrate the reliability of the small car over the long haul. Under lead-footed guidance it covered the distance from Los Angeles to Sebring via Washington, D.C. It should have been tired, but compression check gave an O.K. to all cylinders. Points and plugs were replaced, engine timed and carbs adjusted, engine and chassis steam-cleaned, and MOTOR TREND had a well run-in car to evaluate.

If the purpose of the trip was to verify reliability over the long haul, that it did. Once the car had been cleaned up, the only scars it bore were a few vibrations that no one took the time to locate. Later, after we had picked up the car, a front end alignment removed the major irritations.

Simca, long before the days of Chrysler management, considered the ability to take a thrashing, and bounce back for more, part of what the customer paid for. A stock Montlhery, for example, was tuned by the factory, dropped on the Montlhery circuit, and made to average 70 mph for 37 days. Simca attributes these capabilities to what they call balanced performance; that is, the car is built of components that are not outstanding

by themselves, but when mated to each other the whole car gives better performance than the sum of its parts.

The "Flash" engine is a conventional water-cooled, in-line four with pushrod-operated overhead valves. It is called a 1300 (cc), though it is just under at 1290cc (77.4 cu. ins.). Compression ratio is 6.8 to 1, meaning that regular grade fuel is just fine. For all practical purposes the engine is square—equal bore and stroke—though for some reason the bore is .04-in. larger than the stroke. Maximum torque of 65 lbs.-ft. is developed at 2800 rpm (44 mph in top); maximum power of 48 hp comes in at 4800 rpm (76 mph in top). This is just about top speed.

This seems like a good power/torque split for normal highway use. Most passing situations will occur behind slow-moving, 35-mph vehicles. Without downshifting, the Simca's engine is operating in the rev range that delivers the most punch; at high-speed cruising, power is the factor. Maximum power doesn't peak until you're keeping up with just about any traffic. This the Simca does, and acceleration is on the order of a big car.

One reason Simca drivers can scoot through traffic is a combination of some power at low rpm, the low (4.44) rear-end gearing, and the happily chosen gearbox splits. Fourth is

direct, with third a short downshift away. The strong low-range torque of the engine makes the need for second gear rare indeed, so there's a big step to second cog. This gear is relatively low, for rapid acceleration up to about 40 mph. First gear is not synchronized and functions as a starting gear.

It's easy to outfox the synchro on second gear, especially on speed shifts from first to second. Use caution—or crunch, crunch, crunch. The correct technique is to let the shifting lever nestle in the neutral slot for a split instant. This lets the gears catch up with each other as the synchromesh takes hold. But the linkage stays together without getting sloppy after many, many upshifts and downshifts.

Chassis is pressed steel monocoque construction, body and frame. Front suspension is by unequal wishbones with ball joint, coil springs, telescopic shocks and stabilizer bar. Rear suspension is live axle mounted on semi-elliptic leaf springs that also locate the rear and take the engine torque. Both front and rear are conventional, yet in combination they are effective.

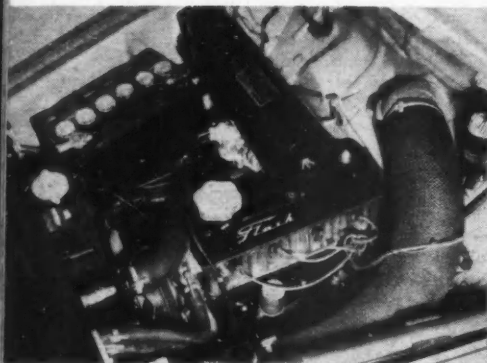
Roadholding and cornering ability of the Simca are surprisingly good, actually a lot better than should be expected with "touring" suspension and a slightly narrow, slightly high profile. Cornering, the car tends to track with the rear following the front wheels at what gives one the feeling of being slightly smaller slip angles. Cornering at high speeds, this effect becomes even more pronounced. Once, overcooking it a bit, it became necessary to back off on the accelerator to let the front swing tight enough to apply throttle again. If we hadn't backed off, the turning arc would have been too wide to negotiate the curve with the available road width. But it is an extremely good handling, predictable and forgiving machine that lets you corner comfortably at speeds far in excess of those you should attempt.

Interior accommodations are ample for four people, crowded for five. Front seat is bench type with one fore-and-aft adjustment for driver and passenger; however, both seats have backs that are individually adjustable for rake. Control is by simple lever on the side.

The rear seat is also comfortable, but with a leggy driver who sits back from the wheel, rear passengers will have limited legroom. It's adequate, but not luxurious. It's a compromise that was well made, because under most conditions space is adequate and the luggage compartment is sizable.

The Simca Elysee is an economy car (\$1898 p.o.e.); you should get from 24 to 30 mpg, as we did using Flying A regular. But—it's an enthusiast's car, too. It turns, handles and accelerates better than some sportscars, and with the Chrysler Corp. behind it, service keeps getting better and better. More and more Simcas have been sold each year, and it's certainly easy to understand why. It's just a good car.

—Len Griffing



"Flash" 1300cc engine is rated 48 hp; in top gear develops maximum power at 76 mph; its maximum torque peak is at 44 mph.



Elysee seats four adults comfortably or five tightly. All seats are well padded, and the front seats are individually set to rake.

### ACCELERATION

From Standing Start	Passing Speeds
0-30 mph 5.2 secs.	30-50 mph 5.9 secs.
0-45 11.0	45-60 11.0
0-60 22.0	

¼-mile—40 mph and 22 secs.

**If you need passenger room plus cargo capacity, your answer lies in**

# WAGONS

*Your Choice  
is wide in  
'60*

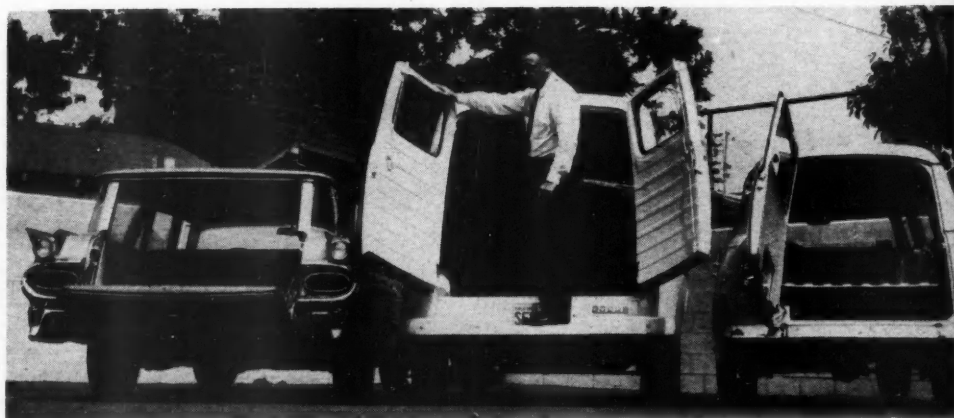
**T**HE LAST 25 OR 50 YEARS have seen remarkable changes in station wagons. Without giving away our age, we can recall the varnished natural wood of Model A's that were used by the "summer folks" at the eastern end of Long Island, scooting over the oiled sand dune roads loaded with families bound for either ocean or bay swimming. Along these same roads were the same type of wagons owned by the local fishermen—weather-beaten men and cars rushing to the fish market with lobsters or blues. Through the years the varnished wood has been replaced with painted metal, and the interiors now have plush passenger car finishes instead of the stark utilitarian hard seats with raw wood and metal.

Today's wagon is a combination, not a happy medium, of a cargo-carrying passenger car and a small truck. If you want passenger car comfort, speed and economy, but need a lot or a little extra space for people or packages, there is a wagon for your specific requirements.

Even the imports are offering everything from wagon versions of their sedans to small buses or "combi"-type vehicles that can be used for passengers, cargo, or converted to "house-on-wheels" campers. If you are willing to give up the sweeping tail section, complete with fins, of the passenger car rear deck, and settle for a rear window and roof that ends at the rear of the car, you will gain a substantial increase in usable cubic feet of space. Basically, most wagons are just that, a design on a passenger car wheelbase that increases rear-end area and makes better use of the overhang by carrying interior space to the end of it, then adding a tailgate to further increase carrying capacity.

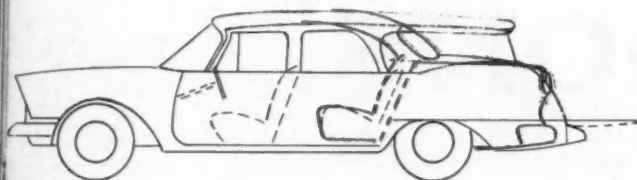
The domestic cars are a natural for this sort of design with their basically long wheelbase, but American Motors and Studebaker have been able to offer fairly large capacity wagons in

*continued*



*Pontiac 6- or 9-passenger wagon, left, has sedan comfort and quality with lots of floor or passenger space. Dodge Town Wagon, center, offers near-standing room with cargo area close to that of Pontiac. Peugeot, right, is compact truck-wagon.*

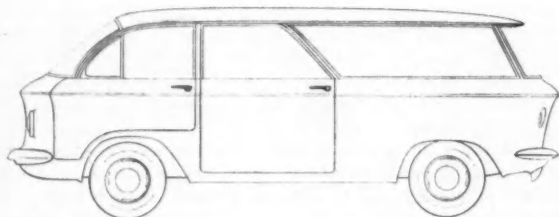
## WAGONS continued



*Elimination of sweeping tail section allows great increase in rear space behind second seat to provide 9-passenger seating or more cargo area on standard sedan chassis. Extra-long packages can be carried if wagon has tailgate instead of the side opening door. Side loading of 4-door models offers advantages.*

their compact car series with a slight increase in wheelbase. Scaled down even further than the domestic "smaller" cars are the small imports. Hiding the spare tire, removing rear seats, reducing legroom slightly are some of the ingenious methods they have used to give the buyer a better break on extra interior room.

For pure passenger comfort, the four-door has advantages and gives extra side loading accessibility. Consider how the rear door opens—you might need the extra length provided by an open tailgate. Consider too, ventilation, for wagon rear ends



*The new Corvair with flat air-cooled rear engine would make an ideal wagon-bus-camper combination as shown by these scale drawings utilizing Corvair wheelbase and engine dimensions.*

have a lot of area with plenty of glass and a large roof area to absorb heat. A roll-down rear window provides a good through breezeway that even front seat passengers will appreciate on a hot day.

International's Travelall is a pure wagon, designed from the chassis up to provide maximum room, reasonable driving ease, economy and a rugged interior finish that does not require the care and protection of the more plush station wagons.

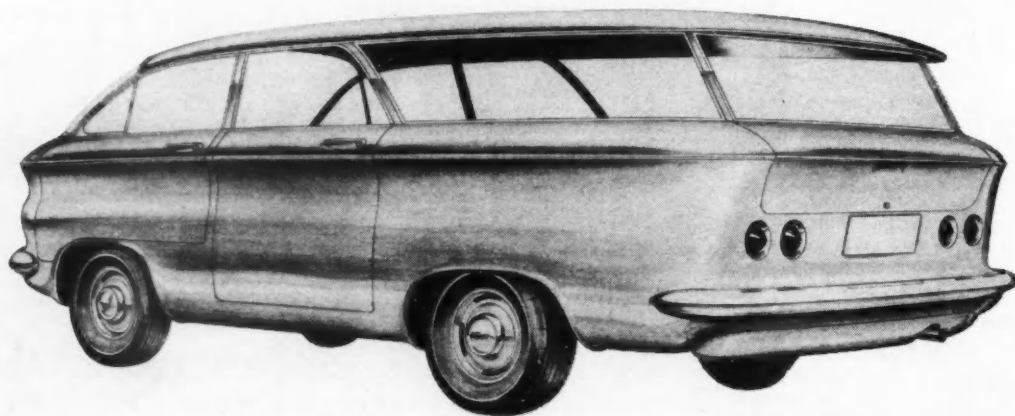
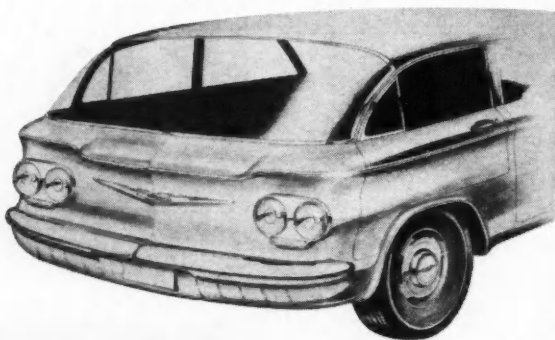
Dodge has a version of their panel truck called the Town Wagon that has room for six passengers and almost stand-up height in the cargo compartment with a set of double doors in the back for loading. It has 32 sq. ft. of usable floor area behind the bolted-down but removable second seat.

On the same wheelbase, 122 ins., the Pontiac Bonneville has the same usable space with the second seat folded, but naturally does not provide anywhere near the 52 ins. floor-to-roof height of the Town Wagon.

Among the longest wheelbases of the imported wagons (114 ins.) is the new Peugeot. A single rear door vertically hinged allows access to 24 sq. ft. with 35 ins. maximum height and almost 6 ft. (enough for a sleeping bag) from rear of front seat to door opening.

Ready soon for American delivery is the Japanese Toyopet wagon. This is a beautifully finished, scaled-down model of an American two-door wagon that provides almost 20 sq. ft. of floor space on a 99.6-in. wheelbase.

Wagons have a lot to offer for extra space requirements. The smaller-engined imports can be more easily overloaded than their touring car counterparts, but about the only thing you can overload with American wagons are the rear springs. There is on the world market today, a wagon for every income, every size family, and if you are an outdoorsman who likes to sleep inside, a wagon for every length sleeping bag. —Charles Nerpel



*Corvair's engine-behind-the-axle design will give the body stylist an opportunity to design a flat floor with adequate headroom on basic wheelbase. Absence of the engine and driveshaft hump will allow more interior space.*



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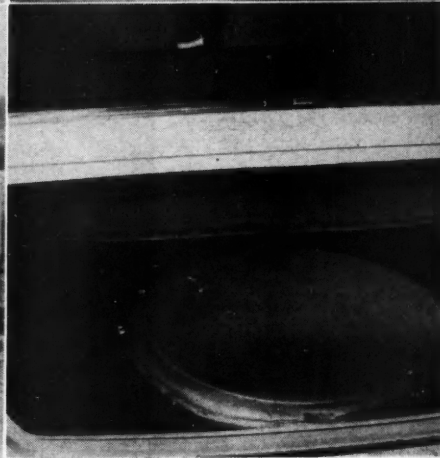
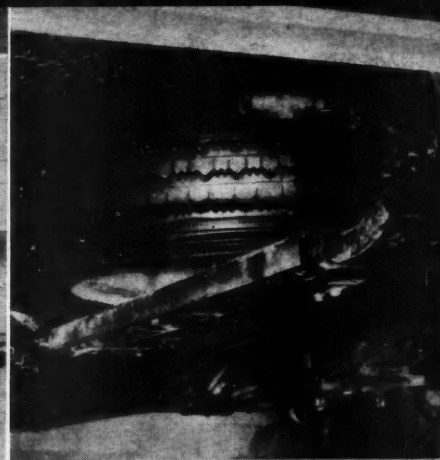
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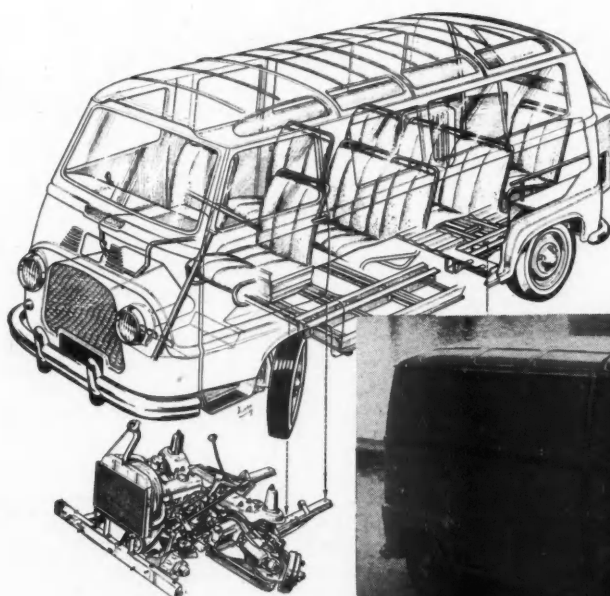
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*Japanese Toyopet wagon (top photos), brand-new for 1960, is offered in 2- or 4-door models on compact car chassis. Cradle-mounted spare increases the floor*

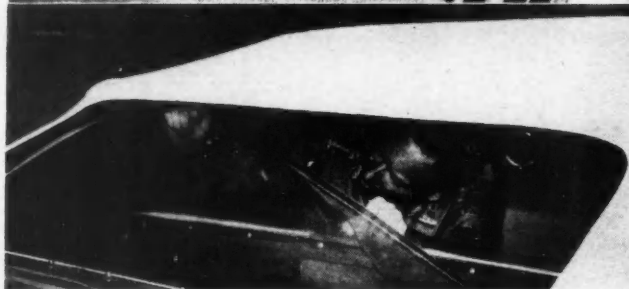
*space. Austin's new A-40 is a Farina-styled sedan wagon (lower photos). Only the lower half of the rear door opens for access to luggage locker and the spare tire.*



*Front-engine, front-wheel-drive Renault Microcar is one of the 4 body styles offered on the new delivery vehicle chassis. Entire engine and drive are easily removed for overhaul and pressed steel body is untized into rigid structure. The Microcar can be used for delivery truck, passenger bus or touring station wagon. Other models will include vans and pickups.*







*With top down on a mild day, any trip is a pleasure trip. Offering unobstructed vision in all directions, Plymouth's Sport Fury is ready to answer the call of the open road. With roof up, rear window can be unzipped for benefits of hardtop, only with lots more ventilation.*

**O**WNERSHIP OF A CONVERTIBLE liberates an elusive something from the soul of every man or woman who climbs behind the wheel. It can't be explained because it's a state of mind—seemingly a release from all responsibilities. It's the way we think we felt when we were young.

In actuality, however, the convertible has quite a few differences from a sedan. Some constitute advantages, others disadvantages; you've got to make your own evaluation, then try the convertible. Chances are the disadvantages will not loom so large, whether you choose a smaller import or a lush Detroit.

The difference that you can't see is in the frame. Deprived of the roof as a structural member, the designer reinforced the chassis with a meaty X-member to keep it (and thus the body) rigid. Next, he added stiffeners in the body itself to supply torsional resistance.

These things make the convertible slightly heavier. Since the added weight is placed lower, the center of gravity is lowered accordingly, contributing to more agreeable handling characteristics and a ride with less body roll, far less drama when cornering fast, and a definite reluctance for the car to roll over in collision. With high-powered engines and weights already in the order of two tons, the additional hundred or so pounds has a negligible effect on performance.

One thing for sure—the day of the cold, drafty convertible

disappeared with the wooden crosspieces and hand-operated tops. The modern convertible is just as snug as its hard-roofed cousins, and with synthetic materials roofs last for years; even air conditioning is feasible. There is still room for improvement in rear windows, which should be unzipped before the roof is lowered, and which have a tendency to cloud over, severely impairing rear vision. Yet, it is possible to get your wind-in-the-face if you want it, and to keep your comfort, too, at the touch of a button. But, of course, initial cost will be slightly higher for a convertible.

It will probably seem worth while, for on the road hardly anything is more pleasant than riding in an open car on a warm day through beautiful country. Driver and passengers alike have unobstructed vision on all sides and upward, too. If the sun is too strong, one moment . . . and styling like a hardtop. If too cool, roll up the windows. Power available, if desired.

Automotive marketing experts foresee one quarter million convertibles sold during the 1960 model year. If you've wanted to test drive one but haven't dared because you might find you like it, now's the time to take a closer look. You may discover that some designer in Detroit or Coventry or Stuttgart has put your *wants* and your *needs* into the same package. Today's convertible is a very practical car.

—Len Griffing

For a practical combination of  
 "open air" ride with roof-top  
 comfort at your fingertips, take  
 a closer look at  
**CONVERTIBLES**



*Imports, like this Rapier, offer unique innovations like a three-position roof.*



*No roof rack needed with a convertible; just lower the roof, lay 'em on. With top down there's access for big, very long or bulky items.*



*The four-door Pontiac is only slightly more spacious than its soft-top counterpart. The convertible driver has an advantage, though—a button that converts his car to an open sports model—only when he wants it.*

# Driving Is Fun In A

**J**UST OVER 10 YEARS ago the MG-TC flung itself on the American motoring scene, and the myriad of imports that followed have already made this little machine a collector's item. Other manufacturers proved very quickly that hard riding, cramped passenger space, poor weather protection, and a loud roar were not necessary to the sport of motoring. Thousands of Americans learned to love the small compactness, lively steering, phenomenal cornering and good fuel economy of the imported sportscar, but just as quickly they demanded more room, smoother ride, better weather protection, heaters, radios, and a place to carry more than a toothbrush.

The overseas manufacturer is naturally interested in developing motor vehicles for his own domestic consumption where fuel costs are high, distances are short, automobiles are a luxury, and installment buying is rather limited; but he eyes and builds for the American market.

Treading lightly, American manufacturers got their feet wet with Ford's Thunderbird and GM's Corvette. The T-Bird gave way to a "sporty"-type four-seater; the Corvette retained its desirable features, including competition options that promised even greater choice until the AMA agreement to subdue emphasis on speed forced them to withdraw from racing. The "smaller car" program of the domestic car builders will no doubt soften the "no racing" edict as public acceptance might spark sports or Gran Turismo versions of Detroit's scaled-down cars.

Entirely too much credit has been given to a rather ethereal term called "snob appeal" as the motivating factor behind the ownership of a sportscar. Please . . . let's give credit to the thousands of Ameri-



AUSTIN-HEALEY SPRITE CAN GIVE A GOOD ACCOUNT OF ITSELF ON ROAD-RACING CIRCUIT

cans who still appreciate some of the "old world" qualities of hand craftsmanship that have succumbed to the "million-a-week" production line. This does not mean that all imports possess fine detailing throughout . . . many sacrifice fine-finish workmanship for performance, and some of the minutely detailed cars lack the "go" they might have. But this offers an interesting selection for the buyer from the stark but fantastic little Austin-Healey Sprite to the plush detailing of the Alfa or Mercedes, with in-between combinations of sports/touring cars like Porsche or Aston Martin.

While some imports hold their own in accelerating with the big domestics, they

are generally content to confine their drag-racing activities to cars with similar engine displacements. It is just asking too much to expect a 91-cu.-in. engine to outpull the 350- to 400-inchers of the domestics, despite the weight differential in favor of the small car. If you have to show off, pick a stretch of winding road where you can use to advantage the road-racing proven features such as all-synchro 4-speed gearbox, torsion bars, spot brakes, swing axles (including the low-pivot version), quick steering, overhead cams, multiple carburetion, adequate shocks, good weight distribution, plus a host of other modern chassis and suspension improvements that are hard to find on anything but a sportscar.

Disadvantages? Sure—the main one being availability of parts and service, but distribution of service centers is improving. These small but highly efficient engines cannot give away the losses of performance that big domestics can tolerate due to bad plugs and points, sloppy valve adjustments and dirty carburetors. They require no more maintenance than any other engine, but like the domestics they do need it.

There is a sportscar for every need and pocketbook. Try one. You'll find they are real fun cars that are also practical for most daily transportation needs.

—Charles Nerpel



*Spanish Pegaso is being offered in hardtop and convertible models with tentative prices in the \$8000 bracket, f.o.b. Spanish ports.*



# A SPORTSCAR

Your Choice  
is wide in  
'60



AND STILL BE DRIVEN AS AN AROUND-TOWN TRANSPORTATION CAR. HARD TOP IS OPTIONAL EXTRA. FOR DRIVING REPORT SEE BELOW.

## Factory team Austin-Healey Sprite . . . modified mite

**H**OW WOULD YOU LIKE a perfectly docile and street-broken Austin-Healey Sprite which will run off and hide from stock MG-As, give TR-3s a nasty time in quarter-mile acceleration runs, and stay with big brother Healey 100-6 up to 70 mph?

Impossible? No, sir. We just finished wringing one out and frankly, it was the most fun we've had in a long, long while. When we tested one of the first Sprites (MT, Oct. '58) we predicted that the car would be a huge success. That prediction has come true but we don't claim any clairvoyant powers; any sportscar enthusiast could have determined that the Sprite was going to be a popular package. With its price and performance it couldn't miss.

About our MG chaser: This is a model which is something special. It was one of the factory team cars built for this year's Sebring 12-hour race where their performance was a highlight of the event. The cars finished 31st, 36th and 38th overall and 1-2-3 in GT Class 4. Ours was the last of the trio. The car is loaded with "goodies," every item properly catalogued by the factory in order to comply with racing regulations. But don't go to your Sprite dealer to try and buy a factory hardtop, or 13-inch triple-laced wire wheels, or disc brakes, or . . . but why go on? The important thing is what the car does and how it differs from an off-the-showroom-floor model.

First of all, everything a stock Sprite will do, the team car will do a great deal better. During our acceleration runs with the stocker we used 5500 rpm as a shift point, although

6000 is permissible. The tachometer telltale on the race car remained consistently at 6700 rpm and we were told that the engine was good for 7000. What made it a particular delight to drive was the close-ratio gearbox. (The too-close relationship between first and second and the wide range between second and third gears is one of the stock Sprite's shortcomings.) Adding to the fine handling of the team car is a roll bar.

The neatly sculptured removable fiberglass hard top is an item which we especially appreciated during a heavy Los Angeles downpour of rain. Coupled with aluminum-frame sliding windows, it made weather protection complete.

How do they get an honest 104 mph out of what is essentially an 85-mph sportscar? You start with flat top pistons, replacing the stock concave slugs, which raise compression from 8.3 to 10.5 to 1 (our calculation). Then go to a beautiful straight-through dual exhaust header system, install

1¼-inch carburetors (stock is 1⅛-inch), use a hotter cam which forces the engine to idle at 1400 rpm, take off the fan, lighten the flywheel, install an electric fuel pump, put up with a harsh competition clutch, use heavy valve springs for higher revs, and of course polish and match the ports and balance all reciprocating components.

The surprising thing is that the car is quite tractable in traffic. It pulls smoothly, although not too willingly, in fourth gear from 1500 rpm. But where the horses really start to come on is above 3500 revs. From there on up to valve bounce the car sounds and acts exactly like what it is—a well-bred sports-race machine.

A few runs on the Santa Ana dragstrip against the above-mentioned MGs, TRs and Healey 100s had owners doing double takes, even though they knew that this car had been designed for competition. Then several laps around Riverside Raceway at racing speeds brought home the realization that the car handles as well or better than any other small production sportscar. There is no trouble with brakes, ever. And the Sprite imparts that wonderfully secure feeling that you just can't make any mistakes. If you should blunder into a dangerous situation, the machine is quick to forgive the error.

This Sprite proves exactly what super-tuning can do without altering displacement. The only thing we can't understand is why BMC doesn't see the light and make similar cars available. The U.S. market would buy all the factory could produce—and at the necessary premium price. —Wayne Thoms

### ACCELERATION FROM STANDING START—2 ABOARD

Stock Sprite	Sebring Sprite
0-45 11.5 secs.	9.4
0-60 20.2	15.4
¼-mile 22.5 & 62.2 mph	19.8 & 69.3 mph (with driver only— 19.0 & 72.7 mph)

### PASSING SPEEDS

30-50 9.6	6.5
45-60 11.2	6.8
50-65 14.7	(50-80) 20.9

### CRUISING SPEEDS Maintains 60-65 easily

TOP SPEED  
83 mph

Will hold steady 88-plus without strain.

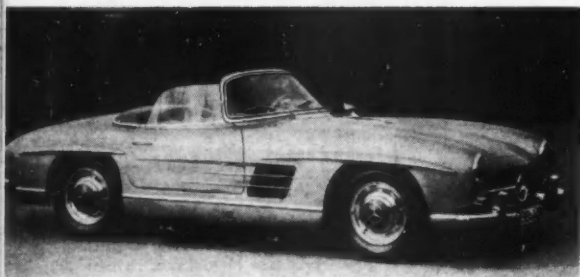
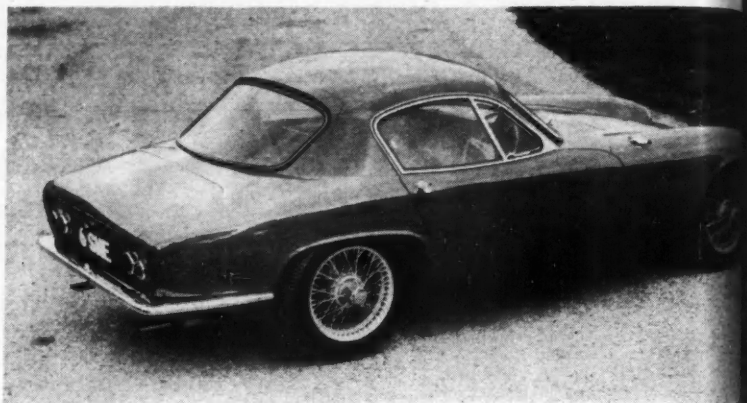
104 mph



# SPORTSCARS

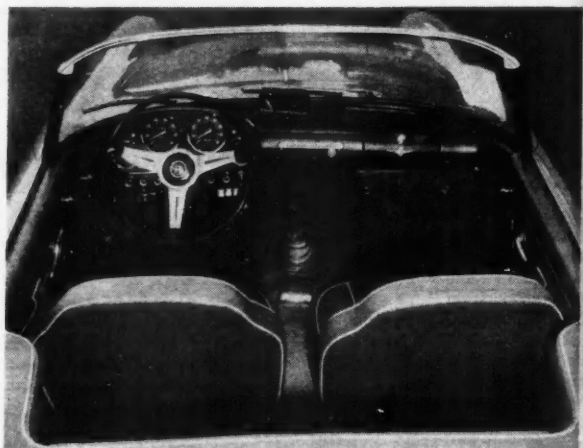
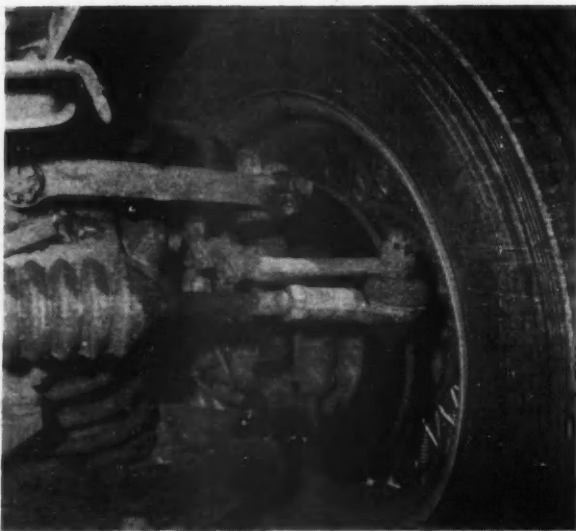
continued

*Lotus Elite, cozy two-seater with fiberglass body that features superb handling and performance, has a surprising amount of luggage space for such a small car.*



*Mercedes 300-SL roadster is the convertible version of famous fuel-injected coupe with gull-wing doors.*

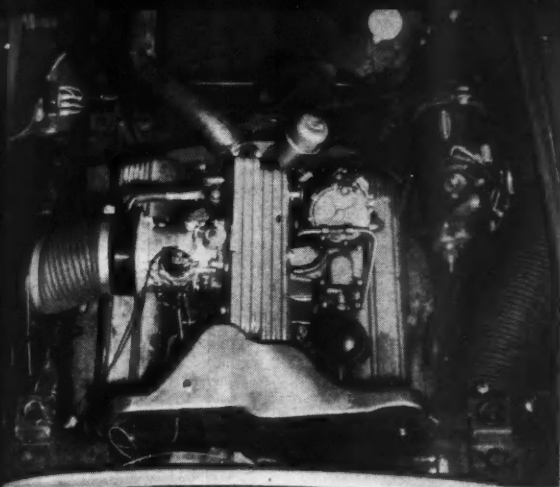
*Spot brakes, unaffected by heat or water, provide positive stopping power and can be relined quickly.*



*Alfa Romeo cockpit is typical of sportscar layout with bucket seats, large speedometer and tach, and centrally located shift lever.*

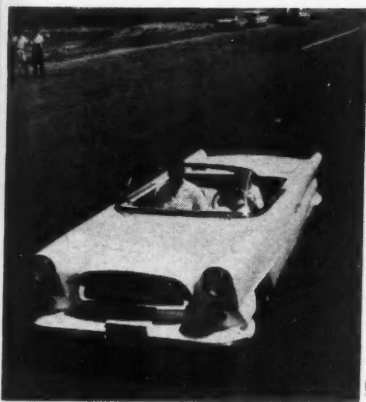
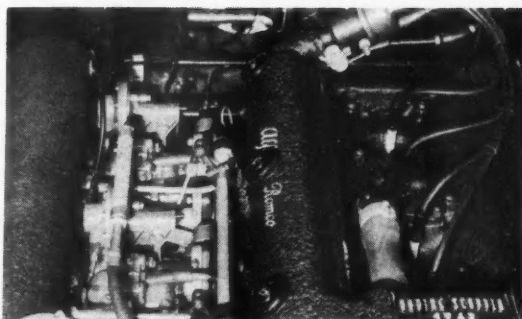
*Full-scale racing program develops many features used on Porsche touring cars. The 1960 coupe has new aerodynamic front end.*



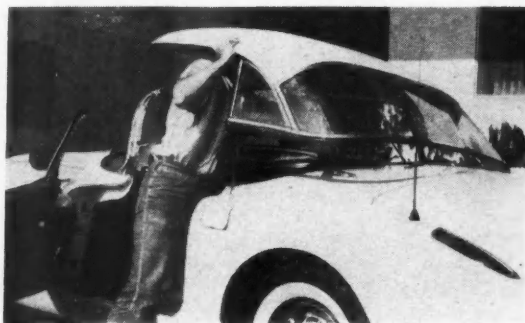
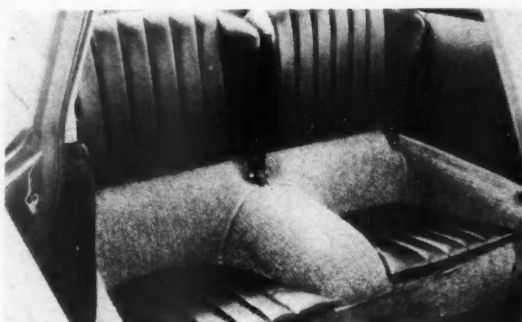


*Alfa 2000 is luxury sports convertible, with double-overhead-cam engine, huge finned brakes.*

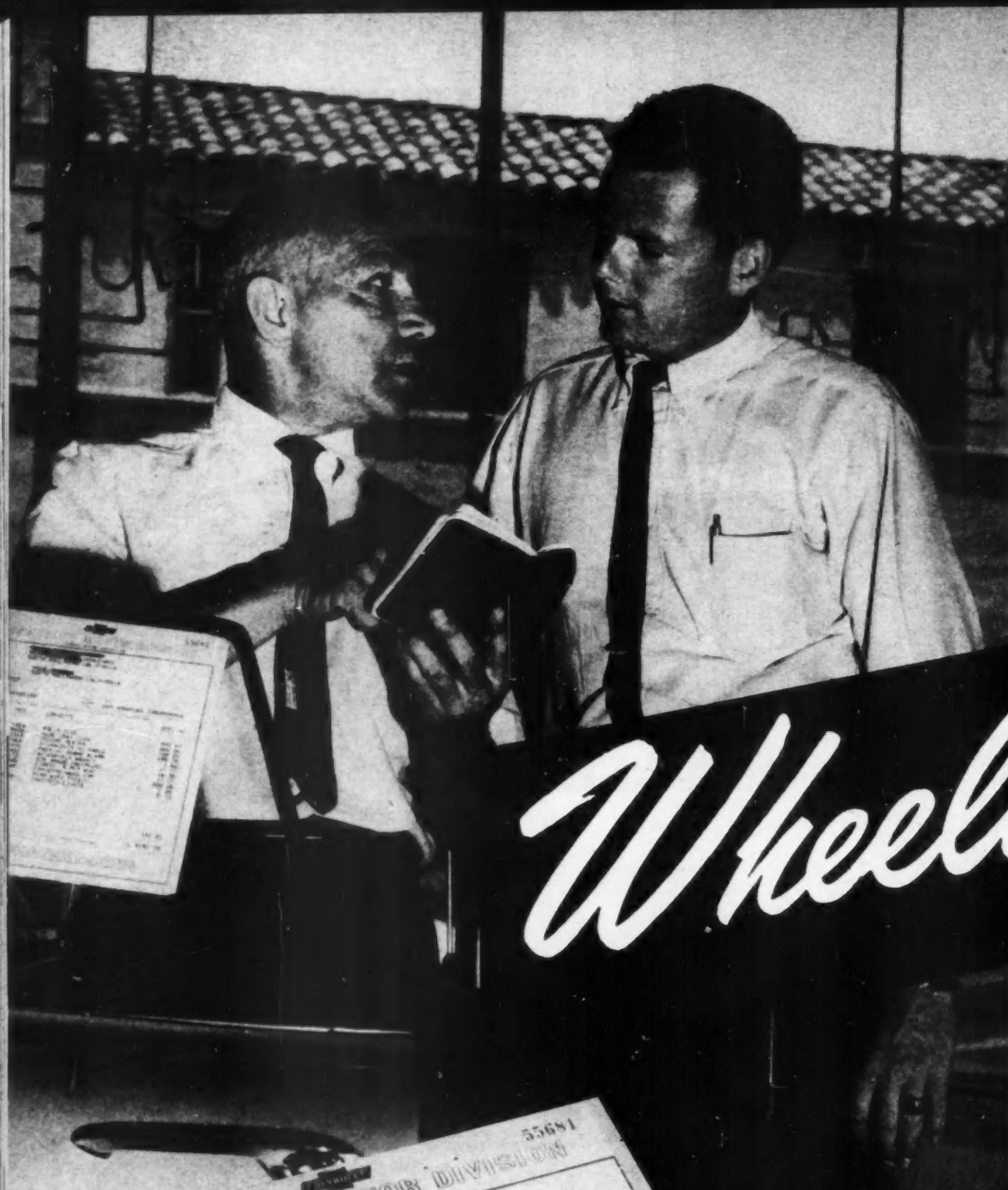
Optional fuel injection offered by Corvette produces noticeable increase in performance while retaining smoothness in low-speed operation for city traffic driving. Tube at left is duct for injector air intake.



*Irish-American Shamrock has fiberglass body over Austin A-50 chassis and engine components, looks like a small T-Bird.*



*Top: Double overhead camshaft and multiple carburetion on the Alfa provide a lot of power from the 4-cyl. engine. Center: New Porsche coupe has individual jump seats with backs that fold flat to provide additional luggage space. Bottom: Roll-up windows and optional hard top (providing increased rear visibility) make snug coupe of Corvette.*



# Wheeling

**Motor Trend**  
SURVEY / REPORT

**CHEVROLET MOTOR DIVISION**  
GENERAL MOTORS CORPORATION  
NORTH HOLLYWOOD, CALIFORNIA

NAME: [REDACTED] ADDRESS: [REDACTED]  
CITY: [REDACTED] STATE: [REDACTED] ZIP: [REDACTED]

MODEL: **CHEVROLET** J595101390  
YEAR: 1967  
MAKE: **CORVETTE**

MANUFACTURER'S SUGGESTED RETAIL PRICE: 10000.00  
PRICE AS DELIVERED: 10200.00  
PRICE ON ORDER: 10400.00  
PRICE WITH ACCESSORIES: 10600.00  
PRICE WITH VEHICLE BY THE MANUFACTURER: 10800.00

10000.00  
10200.00  
10400.00  
10600.00  
10800.00

SOLID BLUE  
BLUE GRAY TRIM  
DELUXE HEATER  
SIGNALSEEKING RADIO  
STANDARD BRAKE WASH  
PARKING SHIELD EQUIPMENT  
SUN SHADE PLY 60W  
CORVETTE HARD TOP  
PERM ANTI FREEZE  
COURTESY LIGHTS

**How effective is the Federal law on new car pricing? Are "discounts" and "price packs" a thing of the past? Does the posting of a price list save you any money? Here in a startling survey by Motor Trend are the facts to prove that they're still . . .**

# and Dealing

**. . . despite "posted prices!"**

by James Joseph

**I**N MIAMI, A PROSPECTIVE BUICK BUYER recently sauntered into a dealer's showroom, gaped at the "posted price" fixed by Federal law to an Electra's window . . . and turned to leave.

"Just a minute, sir," soothed an alert salesman, "you don't want to believe everything you read on that price sticker."

Ten minutes' dickering and the salesman had not only "over-allowed" \$300 on the prospect's trade-in but had slashed \$500 from the factory's new car "suggested retail price."

The eager buyer grinned. "Posted prices," he murmured happily, "are handing the average car buyer a square deal . . . and literally putting him in the driver's seat."

Moments later, however, the rosy outlook turned glum.

"You'll want power steering, of course," urged the salesman, and added the optional—tagged \$50 above the "suggested" price.

"And power brakes?" he soothed, tacking on another price-inflated optional.

Five minutes and five optionals later, the bare-boned Buick's price had soared—sky-high above pre-posted 1958 levels.

"It's the same old 'pack,'" fumed the disgruntled prospect, "with a new shuffle."

The buyer had fallen victim to a sleight-of-hand which cleverly circumvents Congress' year-old-this-month and well-intentioned labeling law; showrooming bare-boned cars, the dealer simply and quite legally packed the price of each and every option installed in his own shop. (The law exempts from "suggested" pricing dealer-installed extras.) Packing the extras, he was able to offer the buyer a "bonus" \$300 for his old

car . . . and a better than average "discount" on the new.

"Such tactics are rare . . . and growing rarer," contends a Detroit spokesman. "Besides, the alert buyer of a stripped-down car need merely compare what the dealer is asking for a shop-installed option with the posted price of the same option—factory installed."

"Over all," says another, "the Federal car-price law has, in just 12 months, accomplished its purpose: it has stabilized the industry, done away with the notorious 'price pack,' upgraded the dealer and handed the buyer what amounts to a ceiling price on every car and its installed options."

But has the year-old Federal Automobile Information Disclosure Act—which went into effect Oct. 1, 1958—*really* accomplished so miraculous a transformation? More pointedly, are you—the average buyer—getting a fairer, squarer shake now that new cars are price-tagged?

To find out, MOTOR TREND surveyed car buyers, dealers, Congressmen and automakers . . . and came up with some contradictions:

Scoffs one Los Angeles dealer, "The 'suggested factory retail price' is completely fictional. It's not the car's selling price, but rather its bargaining price . . ."

Shrugs the owner of a new Ford Galaxie, "It was the same old salesman, far as I could see. He'd changed his suit maybe, but not his spots. I wound up paying seven per cent interest—14 per cent figured over my two-year contract—on the \$1500 I owed. In 1957, when I bought my last car from the same dealer, I paid only 5½ per cent."

*continued*



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## Wheeling and Dealing continued

"There's no doubt about it," says an executive of autodom's Big Three, "posted prices have brought sanity to the sales floor. Hedged as they are by a price ceiling, the wheelers-and-dealers are squeezed. The only direction they can bargain is down... from the suggested price. That's bound to take the confusion out of selling... and give the buyer a break."

"Sure," concedes a car buyer in Chicago, "it's still a horse trade. But this year when I bought a new car, we were both—for the first time—talking the same figures... the ones on the tag."

Seconding him was *Business Week* magazine, which late last year happily announced, "Everybody Loves Posted Prices." The tags, said the editors, were sparking customer-confidence in the dealer... and handing dealers better profits.

But the love-bug apparently hasn't bitten a Los Angeles Chevy dealer who chides, "That price sticker? It's for the birds. It scares prospects half to death... now that they can see, in black and white, that power steering is going to cost an additional \$75, and power brakes, another \$43. Psychologically, people don't care a hoot what a car costs. Their only concern is with the difference... the difference between their old car and the new one... what, in dollars and cents, they've got to come up with to slide behind that shiny new wheel."

Congress, however, didn't agree. Posted-pricing's co-sponsor, Sen. A.S. Mike Monroney (D-Okla.) thought it about time that cars were price-tagged just like refrigerators. The senator, moreover, declared that "consumer confusion" was at least one factor in skidding car sales (which in recessioned 1958 fell 31 per cent from 1957's near-record 6,120,029).

The majority of automakers solidly backed the pricing proposal, a fact which, perplexing to some, caused others—among them a goodly number of customers—to view the bill with suspicion.

GM's William F. Hufstader and Ford's Walter A. Williams, a couple of vocal vice-presidents, endorsed the bill. So did the powerful National Automobile Dealers Assn. Only holdout among the Big Three was Chrysler, who straddled the fence. Leading the opposition was the used car dealers' National Independent Automobile Dealers Assn. (Though the bill pertains only to new cars, they feared used car prices might drop. Apparently their fears were unfounded—used car prices are holding firm).

But even before the bill—which was to become Public Law 85-506—cleared Congress, a strange drama unfolded in Birmingham, Ala.

There, eager Ford dealer O.Z. Hall

jumped the Congressional gun and posted his showroom with some prices of his own... photostatic copies of his confidential factory invoices which he'd boosted a modest four to 12 per cent to come up with what he called "the retail selling price."

Shocked, Ford's local office throttled zealous straight-dealer Hall with a telegram suggesting that his "program be discontinued." (It was... and quickly.)

Hall had gone much further than the law demanded... or than automakers intended. He'd revealed precisely what he'd paid for the cars—his wholesale price. And in autodom no secret is more zealously guarded.

Nor have posted prices unmasked this, the industry's last family secret. As the law demands, the factory must fix to the window of every car leaving the factory a price list which details: (1) The car's suggested delivered retail price; (2) Suggested prices for every option and accessory physically attached to the car when delivered to the dealer; (3) Freight charges factory-to-dealer; (4) The dealer for whom the car is destined; and (5) A total suggested retail price, which includes the car's price, the price of attached options and freight charges, but not state and local taxes or license fees.

Failure to affix the sticker carries a \$1000-per-car Federal penalty. A similar penalty is levied against anyone who alters posted prices or removes the sticker before the car is delivered physically into your hands, the buyer.

Nowhere on the price list will you find an indication of what the dealer actually paid for the car. (For that matter, you wouldn't expect any retailer to reveal his "cost price.") Neither, significantly, is the excise tax listed.

When a posted-price proponent suggested that the law require listing of excise taxes, Chrysler exploded—and understandably so. Reveal the excise tax, said Chrysler, and you've enabled every John and Janet to figure out the car's wholesale price. Since the excise is 10 per cent of the manufacturer's selling price, a \$230 excise tax would mean the car wholesales to the dealer for \$2300.

Hardly had 1959's shiny new crop hit showrooms than you and I were advised to prepare for what one authority called, "The big change—and for the better."

The "pack" was a dead dodo—that was the prediction, at least. And it sounded logical. Hemmed in by a factory-suggested ceiling, and with every factory-installed option priced, how could even the nimblest dealer work the "pack"?

We asked dozens of dealers about the pack. Nine out of 10 declared that it was dead. Almost as many, and in almost

the next breath, damned "The pressure boys . . . who still advertise '\$1000 for your 1954 car . . . sight unseen'."

It didn't add up. It doesn't until you realize that the pack, far from being dead, has simply been reshuffled.

Optional extras, installed by the dealer himself, are excluded from the price law. So instead of packing the car's price, which is posted, he packs the options. He may also boost interest rates on what you owe. (At last count, only 22 states had usury laws limiting interest rates on your car's unpaid balance.)

More insidious, however, is the pack that's built right into the factory's suggested retail price! For the manufacturer has actually pegged his "suggested factory price" at a level which not only permits the dealer to maneuver—wheel and deal—but which, admittedly, is a price he seldom if ever expects to get.

To simplify things, suppose we're talking about a bare-boned 1959 that's "factory-suggested" at \$3600, sans options. Now, the dealer buys the car wholesale for 20 to 25 per cent less than the posted "factory" price. An average is 23 per cent. So the dealer flooring a \$3600 car bought it, let's say, for \$2800. A little subtraction shows he has \$800 potential gross profit.

Actually, in nine out of 10 sales, he has no such thing. Dealers concede that they're lucky to gross 12 per cent, are tickled pink to realize 10 per cent and usually settle for less—about seven.

"Packed" then into the new posted prices, factory-suggested, is anywhere from \$400 to perhaps as much as \$1000, depending on the car.

Because "suggested prices" are packed, dealers can and invariably do give healthy discounts. It takes but a minimum of dickering, if you're an earnest prospect, to get \$500 knocked off the car's total price, options, license and tax included. Or, as in the old days, the salesman may simply over-allow you \$500 on your trade-in. The fact is, he has this "fat" to give away. And he does, albeit reluctantly.

Moreover, by boosting the price on shop-added options, hiking your unpaid balance's interest rate and figuring anticipated profits on your trade-in, he may still be able, as pre-1959, to offer "\$1000 for your 1954—sight unseen."

In a word, though hemmed by a price ceiling, the dealer has considerable room to maneuver. While generally the discounts or over-allowances are dollar-wise smaller, the percentage off the true price is just about the same as before.

The "suggested price"—Congress left it up to each manufacturer to set his own—is thus a kind of compromise between the modest "pack price" quoted in 1958 by legitimate dealers and the price quoted by practitioners of the "big pack."

To prove the point—and because I was actually seriously in the market for a

new car—I shopped one of the West Coast's most reputable dealers where, incidentally, I had bought my last two cars.

The Impala, figuring "transportation charges," was listed at \$3062.35. Options added a modest \$160.20 to the bill. These, plus sales tax and license grand-totaled \$3391.55. I had no trade-in. Yet, almost immediately, the salesman offered a "discount" of \$591.55, a convenient figure which rounded things out to \$2800.

Actually, he'd only "given away" \$422, because \$169 was tax and license. The dealer still stood to gross 10 per cent.

Thumbing back through my files, I came upon the salesman's figures on the last Chevy I'd bought. Admittedly, it was a Bel Air. Still, squaring the Impala's higher price tag plus an across-the-board hike affecting all cars, regardless of model, since my last purchase, I was forced to conclude that both "deals" were all but identical. If anything, I'd paid, proportionally, a bit more this time.

And MOTOR TREND's survey confirms this fact: in general, posted prices work slightly to the dealer's advantage (though not to the advantage of the pre-tag, sky's-the-limit pack artist. He's feeling the squeeze). You probably won't get quite as good a deal—especially during the 1960 introduction months—as before the price regulations.

Common, too, was the pre-tag prediction that pricing would discourage "shopping." It hasn't. Dealers say prospects shop as avidly as before.

And, if you shop astutely, with your ears and eyes attuned only for the difference cost—what you have to divvy up in cash regardless how the deal's figured—you can still play one dealer against another—as in pre-1959.

As before, dealer A will usually knock off yet another \$25 if he's convinced you've all but got your checkbook out. Dealer B will match A's deal and perhaps even cut another \$15 . . . until rock-bottom is reached, a point below which no dealer can go, and yet make a profit. In a word, sharp dealing on your part quickly renders the "fat" from the factory suggested "pack."

A few dealers, who for years had scoffed at the Better Business Bureau as they literally sent buyers "packing," shrugged off pending posted-prices as just another law to "beat."

The "beating," they've discovered, is both difficult and hazardous. Some dealers at first rolled down the window to which prices had been posted . . . to keep them out of sight of buyers. A few brazenly removed the tag. Others wrote up a sale and once it was signed, consigned the car's sticker to the wastebasket, lest the customer discover he'd been up-priced.

Such tacticians, however, ran into a formidable foe—the FBI and U.S. District Attorney's office, both sworn to enforce this, a law with teeth in it. continued

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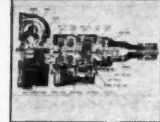
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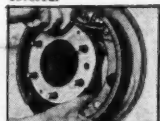
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## Wheeling and Dealing continued

The 1959 models had scarcely hit showrooms than the FBI closed in on a used car "bootlegger" who was hawking a non-labeled 1959 Ford Thunderbird.

Noting that the FBI meant business, the Los Angeles Motor Car Dealers Assn., in a memo to members, said it was "... happy to report that the Federal Government is energetic and sincere in enforcing the Labeling Law."

The Association recounted how, two hours after the infraction was reported to the FBI, agents were on the case, had hauled both the used car and new car dealer into the U.S. District Attorney's office—and dropped plans to prosecute only after the dealer, in the presence of an FBI agent, had restored the price tag to the Thunderbird's window.

More recently, an erring dealer in Connecticut was caught pulling similar shenanigans ... and was as promptly collared by the FBI.

"Wilful infractions have been extremely rare," concedes one industry spokesman, "for violation is a Federal offense ... and the penalty swift and severe."

In its first year of operation, then, the

law—as far as it goes—has been sternly enforced.

Even so, at least two salesmen questioned by MOTOR TREND readily admitted that they regularly removed the tags. One big dealership said, "We always yank the price tag before a car's delivered. That's how the customer wants it." Actually, the practice is a direct violation of the new Federal law which forbids removal of posted-prices by anyone except the "ultimate purchaser" and more specifically, not until the car has been delivered literally into the buyer's hands.

Another dealer said he routinely "corrects" the tag to conform to options a buyer might want pulled from the car or added. Again, he violated the law ... which strictly forbids any tampering whatever with the factory's original sticker.

"You can't," says one attorney, "so much as dot an 'i' on that tag ... without tangling with the federal statute."

A Chevy dealer—as many another—simply pastes a sticker of his own alongside the Federal tag, detailing options deleted or added.

*continued on next page*

## Lawmaker Reports on Pricing Bill's First Year

(The following statement was issued exclusively to MOTOR TREND by the co-sponsor of the price-posting law, Sen. A. S. Mike Monroney (D.-Okla.), Chairman of Subcommittee on Automobile Marketing, Senate Committee on Interstate and Foreign Commerce.)

**AS FAR AS I HAVE BEEN ABLE** to ascertain, the automobile labeling act I sponsored in the 85th Congress has more than lived up to my expectations for it.

I am told it has taken the fake pack out of automobile pricing which was one of its principal objectives. Certainly it has brought about identification of the true factory-suggested list price, a figure which even the FBI would have had difficulty discovering a year ago.

Extensive conversations with visitors from over the country and correspondence from many states indicate that the law has met with general acceptance and even enthusiasm.

Oklahoma and Alabama automobile dealers have held special celebrations in which I have participated, glad that they felt the legislation was worth while.

"The law has put ethics into auto sales," according to one dealer quoted in a Muskogee (Okla.) paper.

An automobile dealer in Atlanta, Ga. wrote me that he thought the law protected "consumers from unscrupulous dealers who manipulated the list price of their products," and that it also protected the reputable dealer "who was powerless to protect himself from the so-called 'packing dealer.'" He added that

he attributed the good 1959 model year to "the added feeling of confidence on the part of the buyer that he is not being overcharged for the car or the equipment," and said he thought my bill had brought "sanity to a chaotic business."

As for the consumer reaction, I have a letter from a metals manufacturer in upstate New York closing with this paragraph: "I have been looking for a new car and for the first time in my life I know what I am buying and what I will have to pay for it. For this big advance in public relations, I understand you are the one to be congratulated."

These are fairly typical examples of the reports that have come to me about the effects of the labeling law.

Another evidence of its value lies in the fact that even the Independent Automobile Dealers, formerly the Used Car Dealers, who provided the only mass opposition to the bill when it was under consideration in Congress, now object only to one feature—the identification of the dealer to whom a car is sold. They no longer object to the sticker bearing a suggested list price.

I had hoped the labels would arm the once-bewildered car buyer with some necessary facts, do away with the advantage held by a few unscrupulous dealers and improve automobile sales by restoring confidence. I believe the legislation has effectively accomplished all three aims, without, as a few cynics predicted, interfering with the great American sport of bargaining over prices of both the new car and the trade-in. /MT



At least one Ford dealer holds the stickers responsible for a lawsuit he calls, "... as underhanded a trick as any buyer ever pulled on a legitimate dealer."

"It's gotten to the place," fumes the dealer, "where if a guy doesn't want a heater in his car—he sues."

Here's what happened: a conniving customer, bent on legal larceny, bought a new Ford, but asked the dealer to remove the heater. The dealer did, and subtracted its suggested price from the car's total. With the deal closed and the car delivered, the buyer next day marched into the ignition and brazenly displayed the Federal sticker.

"Look," he complained with a straight face, "the sticker shows that a heater was factory installed. But it's not on my car now. The law—and this sticker—says it comes with the car... so give me that heater or I'll sue!"

The dealer refused and was as promptly sued. (P.S. At last report, the cheating customer, Federal price list in hand, got his heater.) To squash more legalized larceny, the dealer has made up rubber stamps which, imprinting each contract, and countersigned by the buyer, specify precisely what's been added or deleted.

What, you may ask, has been the net effect of the posted-price law in its first year of operation? Has it really handed you, the average car buyer, a fairer, squarer deal?

If you mean "Am I paying proportionally less for a 1959 or 1960 car than before?" the answer is a resounding "No!" The difference price—what the car actually costs you, regardless of hocus-pocus—is likely to be slightly more, rather than less, since the law's enactment.

If you mean that the worst of the pack artists have been bridled, though not put to pasture, the answer is "Yes and No." The law takes some of the steam and some of the pressure out of high-handed selling.

If you mean that a goodly share of the "mystery" has been stripped from car pricing, the answer is "Yes!" For the first time you have in hand a price list, actual black-and-white figures, inflated though they may be.

But, if you mean that the "pack" has disappeared from the dealer's bag of tricks, or that the factory's "suggested price" is anything more than a thinly veiled, highly inflated fictional price—then the answer is "No!" For despite "posted prices," they're still wheeling and dealing.

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by Dean Parker

**D**ETROIT HAS TRIED almost every engine performance trick in the hot rodder's book during the last few years of the horsepower race: hot cam timings, multiple carburetors, fuel injection, dual exhaust, superchargers, lots of cubic inches. One of the few important tricks they haven't hit hard is *acoustic ram tuning* of the intake ducts... and there is every indication this frontier will be crossed in force on the 1960 model crop coming out next month!

Reliable sources say certain Chrysler Corp. models will feature special intake manifolds designed to utilize natural pressure wave pulsations in the intake air flow to literally *supercharge* the cylinders in the medium-speed torque range.

But what is this "acoustic ram tuning" all about? How did it start? What can it do for us—what is its future potential?

Think back to a little high school physics. You'll recall that "sound" is nothing more than a series of positive and negative pressure waves in the air. For instance, your vocal cords can set a column of air in your throat vibrating, and this oscillating motion is transferred through the waves in the air to your eardrums, setting them vibrating in sympathy. These acoustic waves of compression and "rarefaction" (vacuum) spread through air at a velocity of roughly 1100 ft. per sec.

What you may not realize is that *any* disturbance in the air mass that would cause a change in pressure will be propagated in all directions at this same velocity, even though the pressure change might not cause an audible sound. In other words, when a piston in your engine sweeps down on the suction stroke (to draw in a fresh charge of mixture), the suction pulse is transmitted through the ports, manifold passages and carb venturis at a velocity of 1100 ft./sec. Furthermore, when this rarefaction wave arrives at the mouth of the carburetor, a nice fat *compression* wave will rush right back in to fill it. And then this pressure wave will start back through the carb, manifold and ports to the cylinder, at a speed of 1100 ft./sec. When it gets to the cylinder it will give a pulse of pressure *above* atmospheric, and a definite supercharging effect on power and torque... if the total length of the intake duct is selected to get the pressure wave to the cylinder when the piston is at the end of the suction stroke.

This is the whole idea of acoustic ram tuning. It's a matter of selecting an optimum intake duct *length*, either before or after the carburetor. (Diameter enters the problem, too; but only in a secondary way.) And, of course, since the velocity of sound is more or less a constant, it is obvious that we can theoretically "tune" for only one rpm figure. That is, maximum piston suction comes at about the middle of the down-stroke; thus the maximum supercharge effect will be had if we select

**Like some "free supercharging" . . . ? Detroit will offer it to you in '60 with "acoustic ram tuning."**

a duct length that will have the reflected compression wave arrive at the cylinder at the end of the stroke, or after another 90 degrees of crank rotation. It's easy enough to figure on a slide rule that we would arrive at this point with, say, approximately an 18-in. duct length at a crank speed of 5500 rpm.

But there's still another important angle of this ram effect: When the intake valve *closes* there will be residual pressure waves bouncing back and forth in the intake passage. Since these travel through the duct several times before the valve opens again they are not as powerful as the primary suction wave when the piston descends. (They lose about 12 per cent per wave.) But these secondary waves will tend to give two or three irregularities in the torque curve in the lower rpm ranges—and, depending on valve timing and duct length, these residual pulses can be utilized to give some torque boost at the low end *even* with a relatively short duct.

**HOW IT ALL STARTED** As usual, there's nothing new under the sun. An Italian engineer named Antonio Capetti published a technical paper on intake ram tuning of four-stroke engines in 1927. How much further back the idea goes we don't know. Anyway we know some large stationary industrial engines used special intake pipe lengths to gain added torque in the 1930s. British automotive history books suggest that Freddy Dixon used multiple carbs and tuned intake stacks to get fabulous speeds from his 91-cu.-in. Riley sports-racing cars in the mid-'30s—

## GETTING MORE GO

When we received this article on "Ram Tuning of Carburetors," we felt that it should be brought to the attention of our readers as soon as possible. Therefore, we are delaying the article on "Camshafts and Valve Gear," which was the regularly scheduled one in our series "Getting More Go." This article will be presented next month.

# Sound Waves

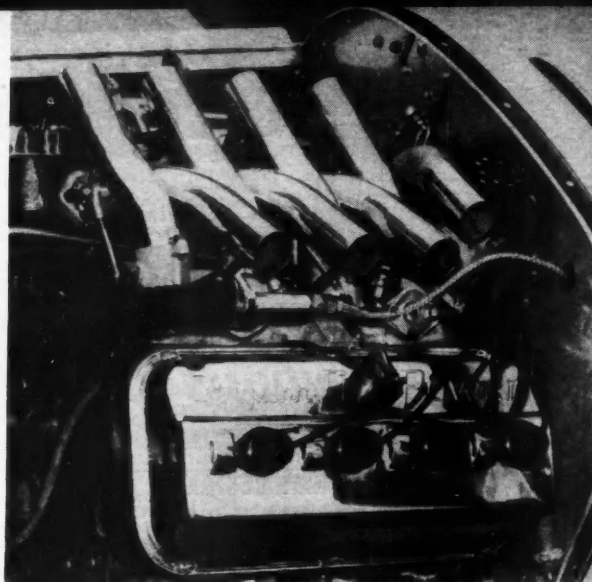
but they were never sure because he always kept his hood padlocked! The Norton motorcycle people in England spent a lot of time on *exhaust* tuning on their racing engines in the late '30s (same principle as intake tuning, but in reverse), and developed over 1½ hp per cubic inch at 6000 rpm unblown. But they apparently neglected the intake side because of space problems on the bike, as approximately a 15-in. pipe would be needed to tune at 6000 rpm.

The ram intake principle seemed to grow slowly after the war, possibly because of the concentration on supercharged engines. An early application, possibly the first postwar, was on the 1952 Ferrari Formula II single-seater racing car, which used four single-throat Weber carburetors and individual stacks for its four cylinders. The success of this combo boomed the popularity of tuned intake and exhaust, and within a year or two all the successful European racing cars—both Grand Prix and sports—were using the principle.

And it didn't take us long to catch on over here. Many readers will recall Chrysler's experimental program to develop high-output Firepower V8 engines for racing in the 1953-'54 period. They reached a peak at 447 hp at 5600 rpm with only 331 cu. ins., burning methanol—and a Kurtis roadster powered with this engine set a closed-course record of 182.6 mph! Chrysler engineers spoke of the record as "... but one aspect of our engineering explorations to find the potential of this engine." One of the most interesting points about this engine (as it concerns our story) is that it had long flared tubes extending from the Hilborn fuel injector bodies that curved over the top of the engine to the opposite rocker cover (see photo). Optimum length was determined by running the engine on a dynamometer with *telescoping* tubes on the injectors; tube length was varied until the engine showed maximum torque at peak rpm. That beats the slide rule!

After this impressive demonstration ram intake tuning flourished on both sides of

# at Work

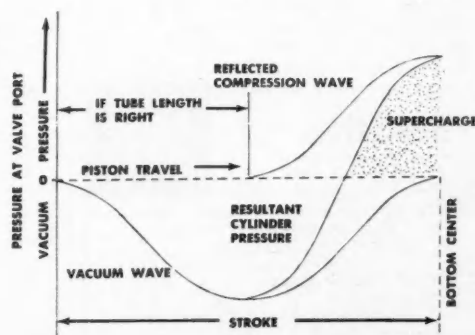


As early as 1952 a ram-tuned Chrysler was being tested in a Kurtis racing car chassis at Indianapolis. This engine and a later one driven by Sam Hanks, left, employed curved tubes on each injector air intake to utilize sonic waves and properly time them to the valve opening. This engine developed 447 hp, set a 182.6 mph closed-course record.

the Atlantic. Hot rodders started to fool with it in a small way, but they were handicapped because simple formulas for calculating tube lengths were not widely available at that time—and dyno-testing was expensive. They have been groping their way. In fact it's been in only the last two or three years that the Indianapolis Offy engines have had efficient ram intake systems available, and that mostly through the efforts of the progressive Mr. Stu Hilborn. He has spent many hours on the dyno to tune the stubborn Offy engine in a speed range that would pay off in lap time. He finally settled on the 5000-5500 rpm range for more punch coming off the turns.

And then, of course, there's Detroit.

continued



Pressure and vacuum waves inside the intake manifold look like radio frequency signals when plotted on a chart. Manifold length can be calculated for any engine speed.

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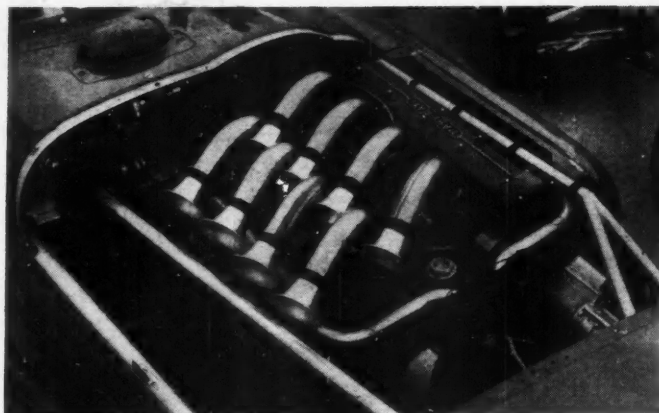
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Hilborn engineered tuned intake stacks with flared ends installed on Maserati engine in Indianapolis racing chassis. All-out ram tuning uses same principle on exhaust to help piston push out burned gases by using shock wave to pull.

## SOUND WAVES

continued

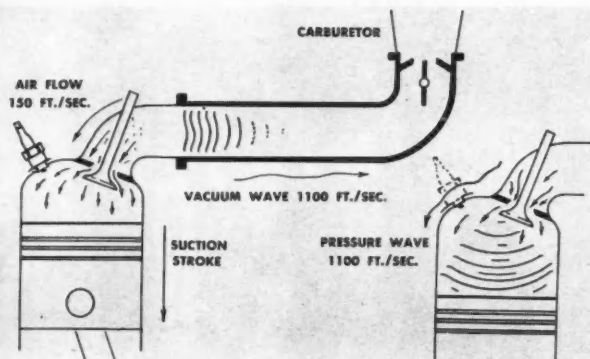
Most auto enthusiasts don't realize that most of the auto companies have experimented at one time or another with tuned intake. We heard of a 322-cu.-in. Buick engine that showed almost a 15 per cent torque boost at 2000 rpm with a make-shift intake stack rig using 40-inch tubes! This was around 1956. In 1957, of course, we saw the new Chevrolet fuel injection system with a real neat layout of ram tubes connecting the head ports with the air meter plenum chamber. Optimum length and diameter were again determined experimentally by the telescope method, and Chevy technical literature suggests the greatest torque boost comes in between 3000 and 3500 rpm.

**A NEW 1960 TRICK** The fabulous results achieved with ram tuning during the '53-'54 Firepower racing engine program have been bugging Chrysler engineers ever since. Here was practically free horse-

power and torque. How could the principle be incorporated on a passenger car without being too complex or expensive?

One big problem here is that the passenger car engine is not often wound up to peak rpm in everyday use; a torque increase in the medium speed range from maybe 2000 to 3500 rpm—for quicker passing acceleration on the highway and street—would be much more useful than a peak boost. But this would require intake passage lengths in the range from 25 to 45 inches to tune the primary piston suction wave. We obviously have a space problem. But Chrysler engineers didn't give up. Some pretty weird test rigs have showed up in the Chrysler experimental garages in the last two years. One setup had long fabricated tubular "headers" that looped over the right bank of a V8 engine, then dropped down the side, around a U bend, and up to mount two four-barrel carburetors! Another V8 design had cast manifold tubes running back mounting two four-barrels next to the firewall. Several layouts were tried with the

continued on page 74



Descending piston creates suction pulse that travels through intake at speed of sound. Compression wave bouncing back has great velocity and will supercharge the cylinder if manifold length is tuned so wave arrives when intake valve opens and lets it in.



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**W**ITH ONLY TWO MONTHS LEFT in the Project IDEAS contest, MOTOR TREND readers who have not yet entered are urged to do so without further delay. In addition to the chance to express your own design ideas, there are the attractive monthly and grand prizes listed below.

Entries may be submitted in any of these categories:

- 1) An original automotive design sketch or detail drawing—for a complete car or for one or more components,
- 2) An original model car or a model built from any Revell (or other make) customizing kit, or
- 3) Photographs of an actual full-size car that you have designed or customized.

There are three classes in which entries may be submitted: Apprentice Designer (entrants aged 13 or under); Junior Designer (entrants aged 19 or under); and Senior Designer (no age limit—open to all entrants).

In the six months that the Project IDEAS contest has been running, hundreds of qualified entries have been received, along with many letters of thanks from readers for the opportunity to present their designs—strengthening our belief in the basic philosophy behind this competition: INDIVIDUAL DREAMERS ENCOURAGE ADVANCE STYLING.

If you haven't entered yet, send us your drawings (please mail them flat), your customized or original models (pack them carefully to avoid shipping damage.), or photos of your full-size customized car (large, clear prints are advised).

*A design to combine long-wheelbase riding comfort with short-wheelbase turning radius wins this month's Junior Designer Class prize for Howard Itzkowitz (17) of Brooklyn, N.Y. With a 185-in. overall length and a 100-in. wheelbase, the suspension has U-shaped axles that are torsion-bar mounted to the frame. Adjustment clamps move out to stiffen the ride, in to soften it.*

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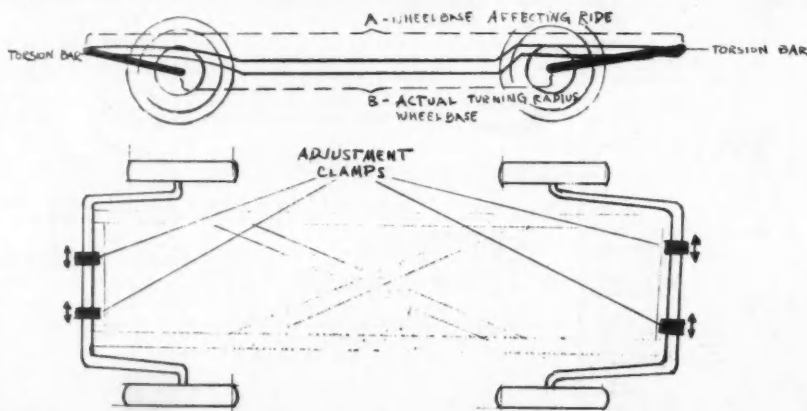
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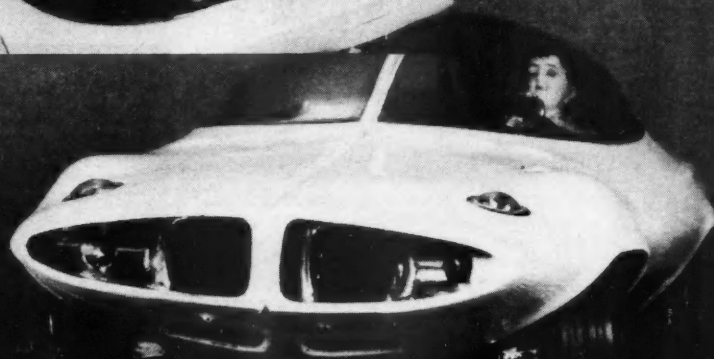
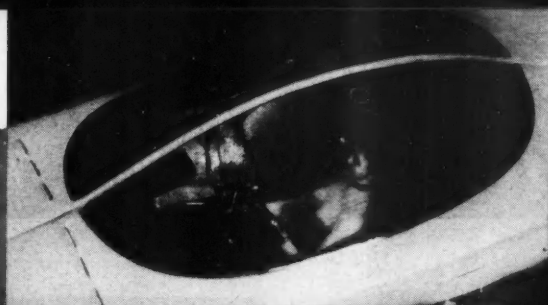
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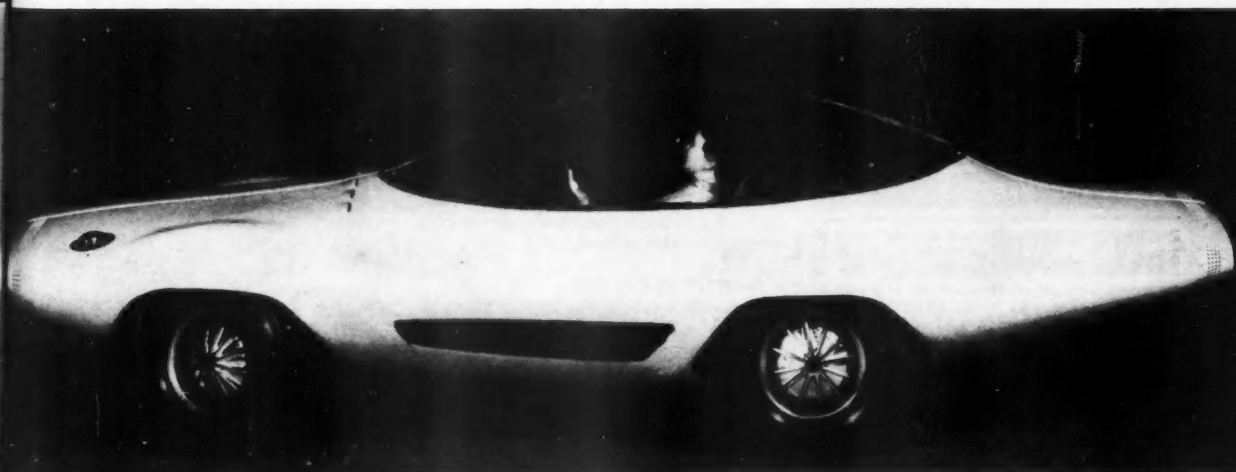
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This striking two-seater hardtop sports car wins Senior Designer Class prize for Robert Eckholm (21) of Elmhurst, Ill. Dimensions: wheelbase 86 ins., length 180, height 48, width 69. All body panels unbolt from main seam line for easier access to engine and interior. Aerodynamic styling has upswept rear working as air foil; retractable fin is raised at higher speeds. Bumper sections are made of reinforced flexible plastic to absorb minor jolts. Perforations allow recessed lights to shine through for added nighttime safety. Headlights are pop-up type.



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## Shopping FOR YOU AND YOUR CAR

by Len Griffing

### FLOODING PROBLEMS

Had a real problem recently. One of the twin SUs on my Austin Sprite refused to keep gasoline in the bowl. On level straights it worked fine, but whenever I tackled a long steep downgrade, or tossed the car into a turn hard, the bowl filled and fuel kept coming in until the engine compartment reeked of it. This is doubly disturbing: it's very wasteful, and it constitutes a genuine fire hazard.

About this time Paser Industries left for our inspection a carburetor fuel shutoff valve testing gauge. It consists of a vacuum syringe into which the valve seat is placed. The needle is then set in the seat, and by squeezing the



syringe a negative pressure pulls the needle against its seat. A gauge, calibrated in psi, shows whether the pressure holds, or bleeds off. If it holds steady, the valve and seat are good; if the needle slowly drops, replace the seat and the needle (always keep or replace these in combination).

Gauge in hand, I went to my friendly SU parts supplier for new parts. He gave me a set, which I tested on the spot. That's right—you guessed it. The next set he gave me was a little better; the third set seemed to work. Nonetheless, before installing the new valves and seats, I ground them in a bit by hand with tooth paste, which is a light abrasive. After washing them clean and drying them, and rechecking the float levels, the problem seems to be well in hand.

### A SAFETY/COMFORT ITEM

Generally speaking, the modern car is designed to go fast and look even faster. This is fine—we've absolutely no objection to it. Sometimes, however, when entering or leaving the car, we would be willing to sacrifice a little "fast line" for a little more door area and a little less "step-up" design. The writer's mother has been very vocal on this point and, for this reason only, drives an older car (vintage '50). Detroit might take note of this.

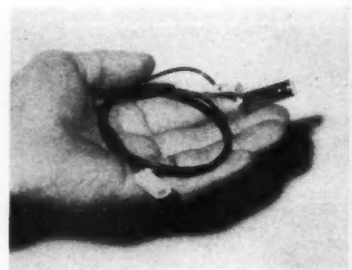
Within the past two months, the Safety Bar Co. (341 E. Camelback Rd., Phoenix, Ariz.) has started production on an item that will have wide appeal, especially for drivers who transport either children or elderly people. It's a padded, very strong dual-purpose bar that spans the cockpit area, and in the event of collision takes some of the hazard away from the suicide seat next to the driver.

Its widest application will be as an assist bar. The young don't seem to notice, but older people just can't get in and out because there is no handhold other than the door, which moves. The safety bar provides this.

It's an attractive addition to the car, and for a family man it's a well invested \$19.95 (plus about \$2.50 installation).

### FOR '59 CHEVROLETS

I did not write a road test on the '59 Chevrolet. If I had, I would have questioned the wisdom of the man who designed in a black-out type of shifting quadrant. True, you can shift from range to range by counting clicks,



especially when the car is new and the linkage is right; but it does seem a lot more sensible to be able to just look.

Well, if you've got one (a '59 Chevy) and are about ready to take a look at what you've been doing, Houser Engineering and Manufacturing Co. (Bluffton, Ind.) have a product called Select-A-Lite, designed for your car. The light mounts by a screw already there, and the wire is a plug-in. Should take about

continued on page 66



# THE NEW MG 1600



## GOES FASTER



## STOPS QUICKER!

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## Shopping

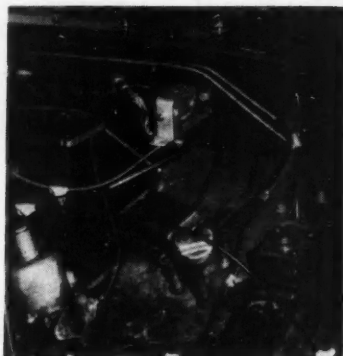
continued

one minute to install, and it directs a pinhole of light over the quadrant.

If you've driven your car only at night, and are curious as to what the quadrant looks like, it's worth the \$2.50 cost.

### BATTERY DISCONNECT SWITCH

One day three months ago it cost me \$130.25 to park my car for one hour. The 25 cents was parking fee; the \$130 was to replace my gearbox. A heavy hand has no place



on a four-speed box, but unfortunately fire laws in congested-area parking lots require that ignition keys be left in locks.

Once around this route was enough. I decided on a battery-disconnect switch, but had a terrible time locating one that would carry the heavy load, yet be applicable for my Sprite.

I received a switch from Sampson Master Switch Co., P.O. Box 167, Clinton, N.C. It is a heavy-duty switch designed to carry the electrical load of buses and trucks. Capacity, relating to automotive use, is infinite. Besides that, the switch is carefully manufactured, durable and small. It can be located anywhere, the on-off mechanism actuated by a 60-in. choke-type pull that is easily hidden.

Being the type who loses keys anyway, I use the unit as a hidden ignition switch. Prices vary with quantity, but a single unit costs \$15. Considering the quality and ruggedness of the product and the protection that it offers against fire, theft and battery discharge, this is a reasonable price.

### PLASTIC CLEANER

A few days ago a can of a new cleaner arrived in the mail. It was sent by Cerbini Labs, 68 First St., New Rochelle, N.Y. I took two English cars—an Austin-Healey Sprite and an MG-A—and applied the cleaner to roof windows and side curtains. In both applications dirt and stains were foamed off, and surfaces showed no sign of streaking or scratching. It does a good job.

### EMERGENCY STOPPING

When Hudson went out of business, with it went the last production American automobile that made any provision for a rupture in the hydraulic brake system. It was a mechanical linkage that tended to rust up and freeze at the joints; but by the same token it was the only system offered. In fact, no one has done anything like it since.

continued on next page

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The hydraulic braking system was enthusiastically accepted by public and manufacturer alike for the same reason. Unlike the rods and cables it replaced, the pressure in any one part of the system is always equal to the pressure in any other part. Thus, with a minimum of adjustment all four wheels exert equal retarding torque against the road.

Unfortunately, this can be a mixed blessing: if a leak should develop in one of the wheel cylinders or a line should be torn off, it will be impossible to develop pressure at that point. (The fluid will just be pumped out.) Since the pressure throughout the hydraulic system is equal—equal to the pressure at the lowest pressure point in the system—the entire system has no pressure. When this happens you have *no brakes!*

I had occasion to examine the installation of a product called Saf-T-Brake (made by Saf-T-Brake Co. of Akron, Ohio) that was installed on a '59 Chevrolet. It's an improvement over the old Hudson system, and guarantees that in the event of total loss of pressure in one line, half of the braking system will operate until a repair can be effected. Here's how it works.

A hydraulic brake system transmits pressure from the foot on the brake pedal through fluid in the brake lines to cylinders located on each wheel. These cylinders push the wheel cylinder pistons outward, forcing the brake linings into contact with the rotating drums. Braking, or deceleration, is in direct proportion to pressure exerted (until brakes fade).

With the Saf-T-Brake unit installed on or close to the master cylinder, the pressure is exerted against two cylinders in the block (one for front, another for rear brakes). If all lines are intact, this pressure is transmitted evenly to all wheels, by-passing a ball-and-seat check valve located between the two pistons. This valve is held in equilibrium by identical pressure exerted against either side. But let's suppose one of the wheel cylinders develops a bad leak.

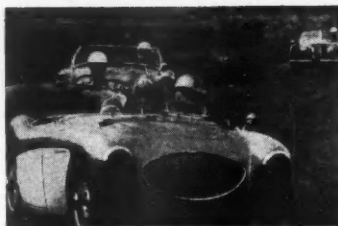
The pressure exerted against the two faces of the check valve is now uneven. One side will have full pressure from the brake pedal; the other will have none, because of the leak in that half of the system. Pressure exerted against only one side of the ball forces it to move across the block and lock into a tapered seat. This action seals off the leaking half of the system; the other half functions normally.

In other words, if a front wheel cylinder blows, the rear wheel brakes will still operate; and vice versa.

I looked at a cutaway of the unit and was impressed by its simplicity. While I was examining an installation, I was handed a wrench, with which I disconnected both front lines I then started and braked the car; result was that the rear brakes functioned perfectly. With the exception of one small spurt, no fluid was lost. Before reconnecting the line, I had to mechanically force the check valve, which had cut off the leaking line, off its seat.

An assistant inquired as to price: \$14.95 plus installation. He asked me if I thought the unit was worth the money. I replied that modern emergency brakes are really not. If you install a Saf-T-Brake and never have a brake failure you'll never be sure. But if you don't, and only once you find yourself stepping on the brake pedal and have it go all the way to the floor, well . . .

/MT



1928 Stutz Brougham with 8-cylinder Black Hawk Engine

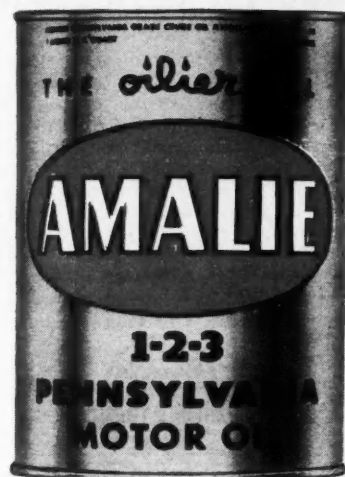
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# Use Tests | OF NEW PRODUCTS

## Gabriel AdjustOmatic shocks offer selective ride control

**R**EPLACEMENT SHOCK ABSORBERS have always posed a problem for the installer and the motorist. For the car owner who wants something **better** than standard equipment the mechanic must stand behind the decision of what degree of shocking action is best for the individual driver and car.

Hard, medium and soft designations are usually those of the manufacturer and vary somewhat between various makes. The only alternative when a customer is dissatisfied with too hard or too soft a situation is to

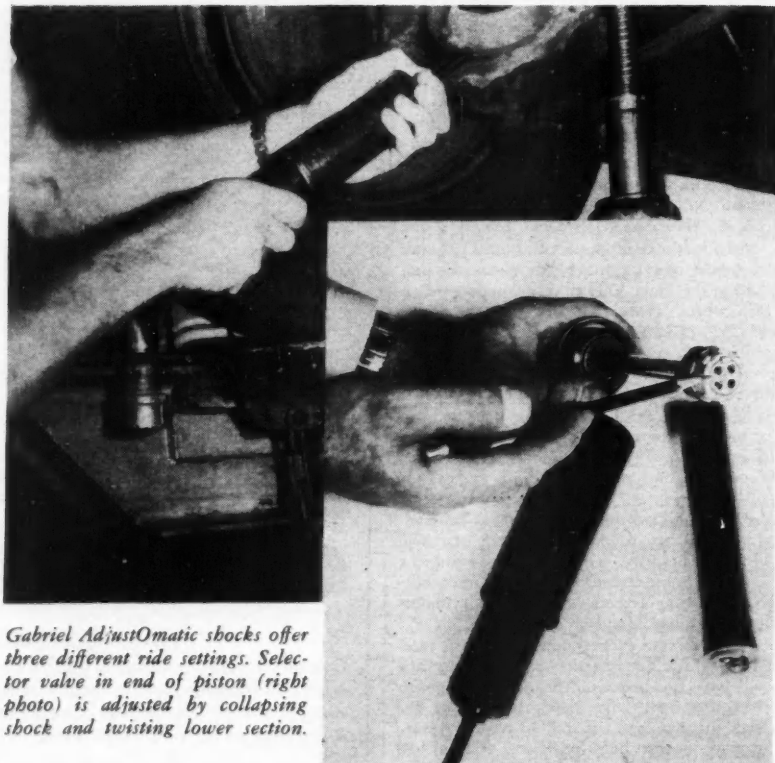


completely replace the units. Why not make an adjustable unit that can be varied according to the specific demands of both ride and load?

This is what the Gabriel Co. is offering in its AdjustOmatic shocks. Three settings—soft, for well-cushioned rides on good, smooth roads at normal speeds and under normal loads; medium, for improved stability at higher speeds but still within the good comfort range on well-paved highways; and firm, which provides the utmost in stability under hard driving, heavy loads and on roads that are not flat and straight.

This adjustment is accomplished by collapsing the shock, twisting slightly until the adjusting mechanism engages, and then lining up the arrow to the type of action required. This is most easily done before installation, but as in the case of our test car, MOTOR TREND's KaiSoto, this adjustment can be accomplished after installation by disconnecting the lower shock mount.

The KaiSoto, a 1952 Kaiser Traveler with a 1957 DeSoto Firedome engine, has quite a bit more weight on the front wheels than it was designed for. Even with helper springs, proper shocking is a problem. The rear is exposed to great variables as it is often loaded with road test equipment.



*Gabriel AdjustOmatic shocks offer three different ride settings. Selector valve in end of piston (right photo) is adjusted by collapsing shock and twisting lower section.*

The first installation was by Norm's Brake Shop in Los Angeles with all shocks set at medium, but after driving and handling tests the worth of the AdjustOmatic was proven when we were able to disconnect the lower mounts of the front shocks and reset them to firm, which seemed to handle the heavy front end much better and still provide a ride well within the good comfort zone.

With the rear shocks set at normal, a full load of five adults, a lot heavier than any test machinery we will be hauling, can ride

in comfort on wavy road surfaces without being thrown up or bottomed on normal dips. So far this firm front, normal rear setting on the Gabriel AdjustOmatic is ideal for this application and is a good indication of the flexibility available with these units. The shocks are extremely well made, with "O" ring piston sealing, honed inner cylinder, and a precision orifice selector for adjustment.

MOTOR TREND takes pleasure in awarding Gabriel AdjustOmatic shock absorbers the Seal of Approval.

MOTOR TREND'S testing staff endeavors to select products of interest to readers and to analyze them under conditions of actual use—just as any average consumer might like to test them before purchase. The purpose is to evaluate the product objectively in terms of the manufacturer's claims for it, and to pass on our test findings as a service to readers in trying to help them determine the merit of respective automotive items for their own particular use.

To qualify for a MOTOR TREND Use Test a manufacturer must first present his request for a test in writing to Testing Staff,

MOTOR TREND, 5959 Hollywood Blvd., Los Angeles 28, Calif. In addition, before any item is accepted for testing, the manufacturer must sign a release agreeing to MOTOR TREND'S printing the complete, impartial test findings—whether the product be approved or disapproved. Only those products whose makers agree to these terms will be tested, and only those which are proved by actual use test to meet the manufacturer's advertised claims will be awarded the MOTOR TREND Seal of Approval, which may be displayed in advertisements of that particular product.

# Filt-O-Reg holds fuel pressure constant

**L**AST MONTH WE TALKED about fuel pump pressure and carburetor check valves (page 66). We stated that a properly functioning check valve is insensitive to fuel pressure as long as that pressure is *within reasonable bounds*. Let's take a look at what constitutes reasonable bounds.

In case you haven't noticed, big, modern V8s don't give you many miles to the gallon. They use a lot of fuel, and the fuel pump has to deliver this volume to the carbs. This could be done at low pressure by an electric pump, but Detroit uses anywhere from five to 10 psi. Since a mechanical pump isn't too efficient, it needs this high pressure just to get *ample* fuel to the carbs.

One solution to the pressure/volume problem is to install a pressure regulator. A good unit will take an inlet pressure up to 25 psi and reduce and hold it to a steady one to three psi. This will reduce the fuel volume only minutely, and this is meaning-

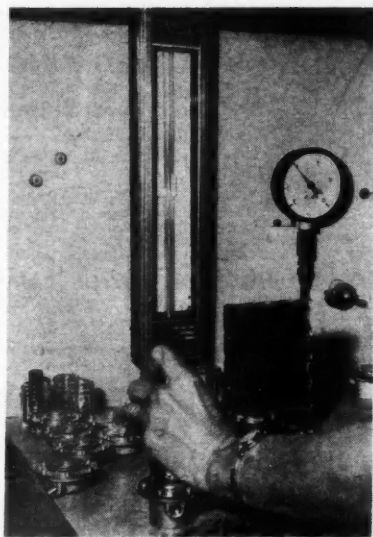
close-tolerance machined parts sealed by Buna-N (neoprene) "O" rings. The filter element is made by Bendix Aviation, and is a true filter (rather than a strainer). Though the filter will hold iron oxide, a magnet is also contained in the bowl.

Any true filter will create a pressure/volume drop through it, and the Bendix-Scrimmer filter is no exception; the flow reduction is in the order of nine per cent. However, this attests to filter efficiency, and there is sufficient margin so that it does not impair engine operation. With filter, an input pressure of six psi passes 42 gal./hr. through the three-psi unit; the two-psi unit passes 27.5 gal./hr.; even the low-pressure .75-psi regulator-filter combination allows 18 gals. to flow through each hour.

Our test apparatus consisted of a Bendix electric fuel pump, a two-psi Filt-O-Reg unit, fuel lines, two Stewart-Warner pressure gauges, and a bypass valve. The first phase of the test was with the bypass valve open. Both gauges evened off at about six psi. Without the Filt-O-Reg in the circuit, the Holley float bowl check valve could not fully close against a full six psi. The result was that the fuel level rose between  $\frac{1}{8}$ -in. and  $\frac{1}{4}$ -in. over the fuel-level specs.

The bypass was then closed, forcing the fuel to flow through the regulator before reaching the float bowl. The gauge between the pump and the input side of the regulator stayed at six psi; however, the gauge between the outlet side of the regulator and the float bowl stopped and stayed between two and  $2\frac{1}{8}$  psi. This is a normal tolerance band. At the same time, the fuel level in the bowl dropped to the recommended level. As we opened the bypass again, the fuel level rose.

What does this indicate? It shows that even a good system is hard put to maintain even, proper fuel level under high pump pressure. When this level gets too high, the engine runs too rich. This is one cause of stalling under deceleration, and hard re-



*The materials and workmanship meet high quality standard. Each unit is bench-tested and checked before it is packaged.*



less as long as engine demands are satisfied. A two-psi unit covers most installations; however a pressure/volume chart will be supplied by reputable regulator manufacturers. Consult it yourself; you may need a three-psi unit.

A complete line of regulators and regulator-filter combinations is manufactured to very high standards of quality control under the trade name Filt-O-Reg (Alondra, Inc., 959 Crenshaw Blvd., Los Angeles 19). The unit we specifically subjected to test was their two-psi "C" (for combination) model.

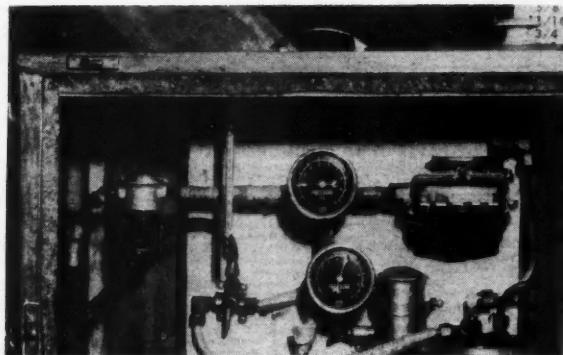
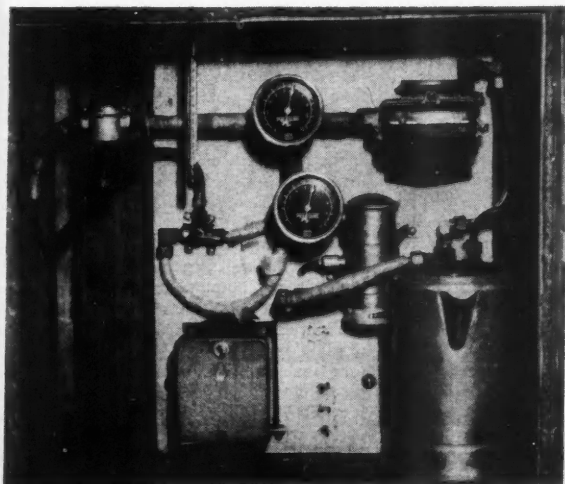
A tour of the factory showed finished castings and heat-treated break-resistant glass bowls. The "works" (which cannot be seen unless the unit is cut open) is made up of

starting with a hot engine. It is also a possible cause of flooding.

The .75-psi regulator-filter is not merchandised for automotive use, and in most cases will be too small. Insufficient volume will have serious consequences: a lean mixture will burn valves and put holes in the tops of the pistons. However, the two-psi or three-psi regulator-filter combinations, at \$8.45, have adequate capacity for most every engine, and you'll be better off playing it straight with either of these. If you already have a filter, a non-filter "S" model sells for \$5.95.

A good engine deserves a good regulator, and MOTOR TREND is pleased to award the Seal of Approval to Filt-O-Reg.

*continued*



*With bypass valve open, fuel flows around pressure regulator, both gauges read 6 psi, float level is  $\frac{1}{8}$ - to  $\frac{1}{4}$ -in. above the level at which float is set. With the bypass closed, fuel flows through the regulator. Pump still holds 6 psi, but pressure to the float chamber is 2 psi. Fuel level remains uniform, lower.*

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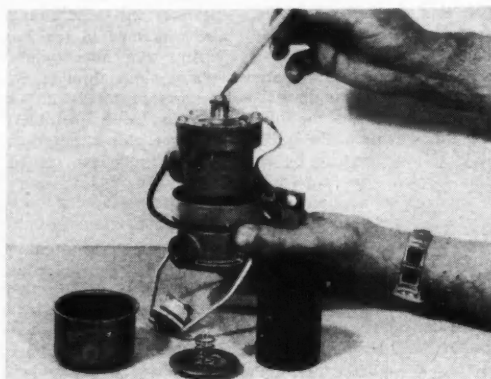
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# Use Tests OF NEW PRODUCTS

continued



Stewart-Warner pump has easily accessible pressure adjustment by screw and lock-nut, a large capacity bowl and filter element, and rugged construction.

## Stewart-Warner pump controls pressure

**A KING-SIZE PUMP** for those king-size jobs is being offered by the Stewart-Warner Corp. Departing from the familiar flat shape that has long identified their electric fuel pumps, the new unit is cylindrical, with pressure adjustment at the top and filter clean-out and sediment bowl at the bottom.

The Model 240-A, as the new pump is called, is loaded with features: Pressure is adjustable from one to eight pounds per square inch. Automatic pressure regulator insures adequate supply of fuel at speed

and art-Warner 240-A has other applications, such as for trucks and heavy road equipment. With this capacity it is an ideal fuel transfer pump for boats, and while not recommended, as the piston is lubricated by the fuel it pumps, MOTOR TREND pumped water with it to test the capacity. With its stainless steel piston it is not likely that the drier fuels such as nitrated alky will do it any harm, although flushing with kerosene after using anything but gasoline will prolong the life of the pump and is recommended.

Having no test vehicle at hand that would demand the maximum output of this pump, the MOTOR TREND testing staff was anxious to find out just how much liquid this unit would handle. That is how we got involved with the water. By actual stop watch test the pump filled a one-gallon jug with water from a supply tank 24 in. below the intake in 61.2 secs. This is slightly under an actual 60 gallons per hour, but we were operating at the maximum recommended height above the supply source and still getting a steady flow from the 3/8-in. I.D. hoses hooked up for supply and output.

The Stewart-Warner 240-A is a real heavy-duty pump, extremely well made with high-volume output. Pressure gauge test showed MOTOR TREND testers that the pump had a wide range of pressure adjustments up to eight psi as advertised. The unit weighs four lbs., five ozs., and draws 1 1/2 amps current for either the six- or 12-volt model. It retails for \$39.95 through Stewart-Warner outlets throughout the U.S.

This pump is awarded the MOTOR TREND Seal of Approval.

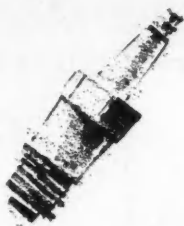


without flooding at idle. Inlet and outlet are 1/4-in. pipe fittings, allowing 3/8-in. inside diameter fuel hose to be used without special fittings. Stainless steel piston and spring insure against corrosion with special fuels, exterior chromate finish protects from rust and corrosion, large filter of bonderized ribbon cellulose can be cleaned and reused. Repair kits are available and only one special wrench is required for overhaul.

The electrical system is not polarity sensitive. The pump is available in either six- or 12-volt, with capacity of 60 gallons per hour output. The shock-absorbing mounting bracket requires only two holes.

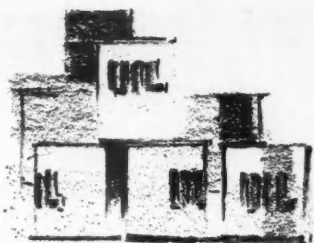
Unless you are feeding alcohol or nitrated fuel to at least eight carburetors, it is not likely that the eight psi and one gallon a minute will ever be necessary, but the Stew-





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## KEEPS ANY ENGINE NEWER, LONGER

This exclusive, special alkaline Magna-Power alloy sacrifices itself to protect your engine.

No engine—without the protection of Magna-Power—can escape the damage caused by fuel-produced, corrosive acids and other compounds. That's because acids—sulfurous, sulfuric and many others—are formed right in your oil by the “blow-by” vapors that mix with condensed moisture (also from the “blow-by”) right in your engine whenever it is running.

You don't see this acid of course, but you can measure it chemically. And you can smell it in the characteristically sharp odor of the gases from under the hood, or you can see what it does to your muffler and tail pipe. Fortunately most of these acid gases pass off through the breather and in the exhaust, else the engine would be overwhelmed in a few months. The wonder is that your engine lasts as long as it does. True your oil is fortified against this attack, but Magna-Power is an effective, safe way to extend that protection even farther, and a sure way to cut down on those expensive repair bills caused by “wear” and to reduce the formation of heavy sludge and varnish deposits.

#### INCREASES TRADE-IN VALUE

Cars with Magna-Power almost always have

a higher trade-in value because of the better engine. It is a safe, sure, inexpensive way, and it is easy to install—you can do it yourself in a minute or less at your next oil change.

#### HOW MAGNA-POWER WORKS IN YOUR ENGINE

Magna-Power is simply an oil drain plug that is built to replace the one now in your engine—but with a difference! A special, sacrificial metal alloy piece is added to the threaded steel part so that this metal is in direct contact with your oil at the lowest point in the engine. It neutralizes corrosive acids that come in contact with it and by electrolysis those acids that come in contact with the other metals inside your engine, thus reducing corrosive wear to a minimum.

#### MAGNA-POWER CUTS SLUDGE FORMATION, KEEPS ENGINE CLEAN

It is a very powerful sludge and varnish preventer. Even a small area the size of a penny is effective for the amount of oil in a car. The special alloy in Magna-Power is so active chemically that it soon turns

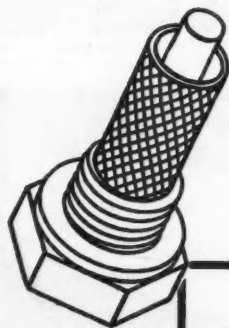
dark even in the ordinary air we breathe. Its action on strong oil acids is violent—fortunately only tiny amounts of these acids are present at any one time. But you must have the right combination of metals—many car owners have tried the cheaper imitations (which we could make ourselves) and have found them practically worthless. Don't blame the Magna-Power idea because of their failure.

#### 30 DAY TRIAL—UNLIMITED GUARANTEE

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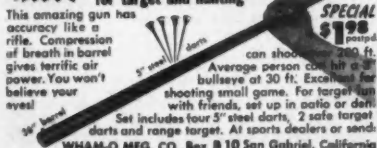
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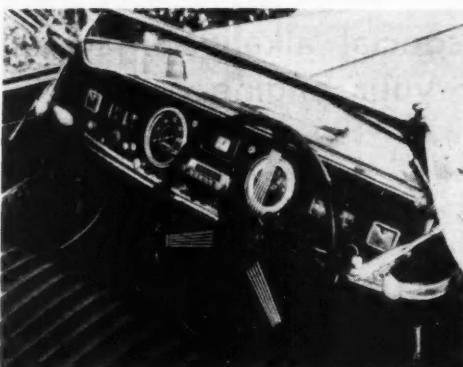
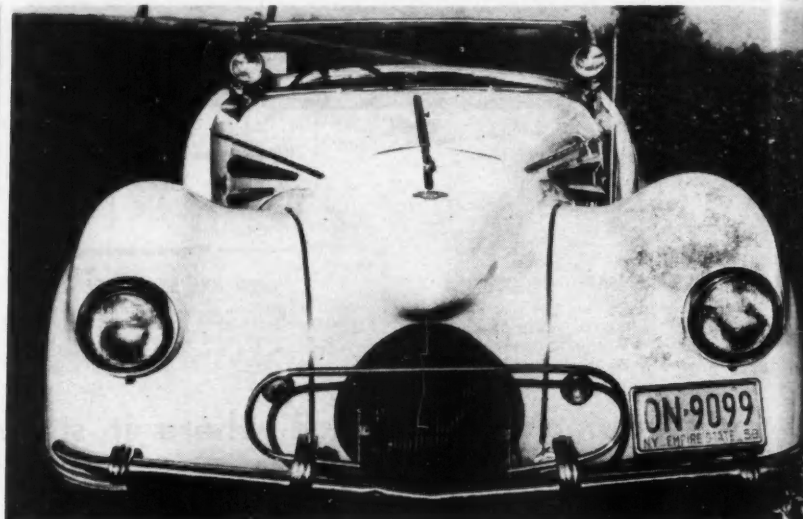
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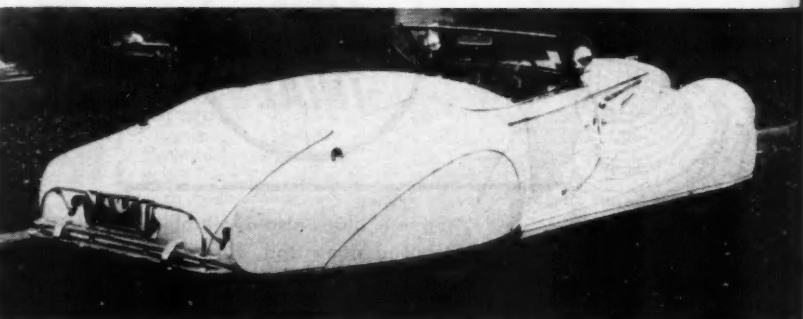
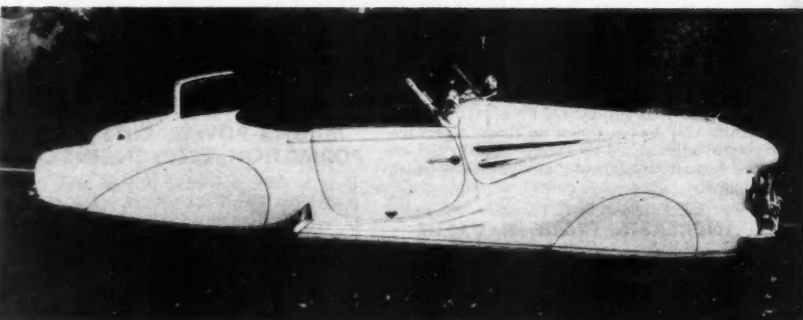
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## DETROIT DREAM CAR?

Photo Story by  
John Webb de Campi



**A**LL UNUSUAL CARS ARE STARED AT and the 1948 Delahaye seen at left is no exception. When we drove this one it really attracted attention—from other drivers and pedestrians alike. Most of those who saw the car in and around the town of Wilmette in Illinois thought it was a Detroit "dream car," while one person (a pox on him!) thought it was "a 1954 Nash covered with fiberglass."

Ever since the first horseless carriage chugged through the streets of Paris, the French have loved their automobiles and have produced some of the most unusual cars in the world. Possibly the most unusual of all the recent French machinery is this 1948 Delahaye, one of two built, the other residing in the stable of the Aga Khan.

The body was handformed of aluminum by Figoni & Falaschi of Paris, who were famous for their voluptuous bodies on such expensive machinery as Talbot Lagos, Delages, and even an occasional Rolls-Royce. This car won the Grand Prize when it was shown at the 1948 Paris Auto Show and anyone who liked it well enough could drive it home by laying out \$33,600!

While some may dispute the car's beauty, no one can challenge its uniqueness or craftsmanship. It is neither small nor light, weighing over 4000 lbs. and measuring 19 ft. (same as a 1959 Lincoln). A small rumbleseat is provided in the rear deck for two passengers; that is, if you can find two people willing to climb over all the metalwork to get in.

The black nylon top is one of the most attractive features of the car, because it can be raised or lowered with an easy sweep of one hand. The trunk is amazingly large, considering that it also contains a 25-gal. gas tank and a 17-in. spare tire.

When the car left the Paris factory it had a 3½-liter overhead valve engine and a Cotal four-speed electric gearbox. The lack of power and service problems prompted the owner to have Long Island speed specialist Bill Frick replace the original engine with a Cadillac engine and a Hydra-Matic transmission. Engine modifications took the horsepower to over 300. No doubt the purist would be saddened by the conversion but driving the car might change his mind.

You slide in under the classic wire-spoked steering wheel and onto the low seat. A pull on the starter and the engine is alive. Pull the lever into gear and you're rolling. Touch the throttle and suddenly the big speedometer reads 80. Tap the horn to warn an unwary bicyclist of your presence and a set of harmonic horns sounds the call. You come to a bend and find the steering quick but exceptionally stiff. The car tracks through the turn beautifully with only a trace of lean. The actual top speed of the car is in excess of 130 mph, yet at cruising speeds the car gets 18-20 mpg.

Quite a car—even for these days.

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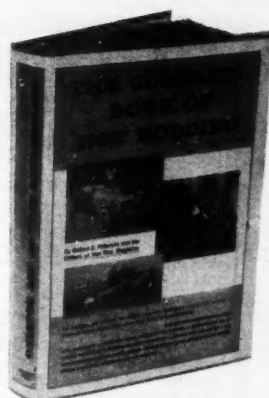
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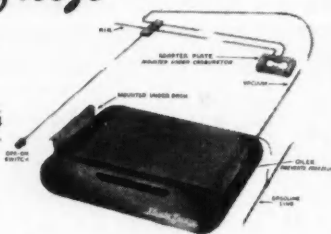


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## HOT ROD

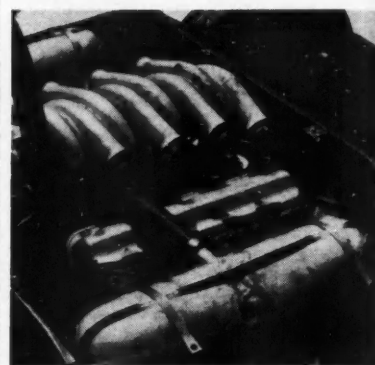
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## continued from page 60

If this is the *actual* configuration, you could expect this kind of a performance increase: Primary tuning should come in



So it looks like Chrysler may be starting something with their unique tuned intake manifolds for 1960. Chevy didn't cause much stir in '57 because their tuned stacks were overshadowed by the brilliant fuel injection system, and most people didn't realize that the tuning principle would work as well with carburetors. Now the door is wide open—and future possibilities look tremendous. For instance, if we trend toward smaller engines in smaller cars in the next few years, we will need to use every possible means to boost the horsepower and torque output per cubic inch. Ram tuning could be an important tool. And when combined with a highly developed fuel injection system—who knows what kind of performance and economy might come out??

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## CHUCK DAIGH tests the F.1 SCARAB

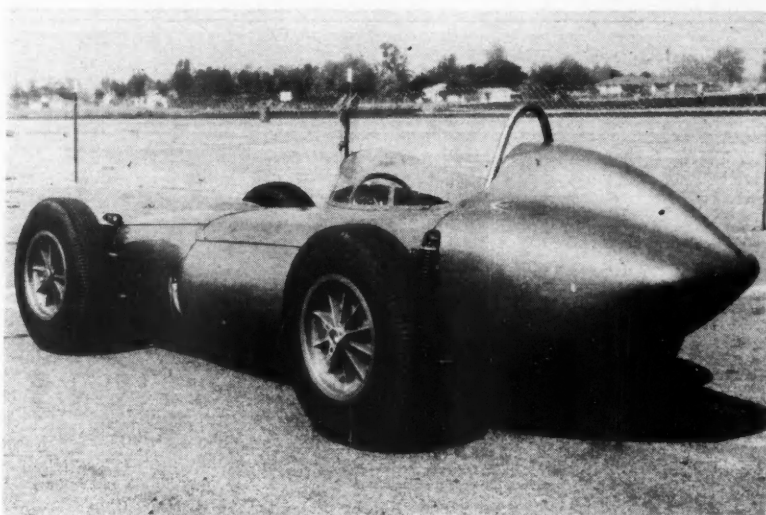
THERE WERE NO SPECTATORS at Riverside Raceway when the sleek, metallic-blue Formula 1 Scarab was backed out of the huge Lance Reventlow van in the early morn. Under the supervision of team manager Warren Olson, the crew of Marsh Whitfield, Tom Barnes and Dick Troutman finished the routine chassis and tire check and laid out the tow rope for starting.

As driver Chuck Daigh arrived, Whitfield taped bits of yarn onto various parts of the body near the airscops so the two cameras out on the course could record the airflow at speed. Daigh squirmed into the tight cockpit, the tow vehicle pulled the car, and the Offy four-banger (used for test purposes only as the car will have its own original engine) fired up with a roar. The first Formula 1 Scarab was making its virgin tour of a road racing course.

After a few laps to warm up the oil, Daigh began to step up the pace. With a negative camber on both front and rear wheels, you would think handling characteristics would be weird. "Anything but," said Chuck later. Knowing little of the braking "feel" and not wishing to overtax the temporary water-pump cooling for the single rear brake, Daigh gave himself lots of slow-down time going into the corners. Or, so he thought.

Actually, pit stop watches caught him in 2 mins. 9 secs. for the 3.3-mi. course. A qualifying speed like that will put you in the front row of any race at this course. And that's where they hope to be—in the front row.

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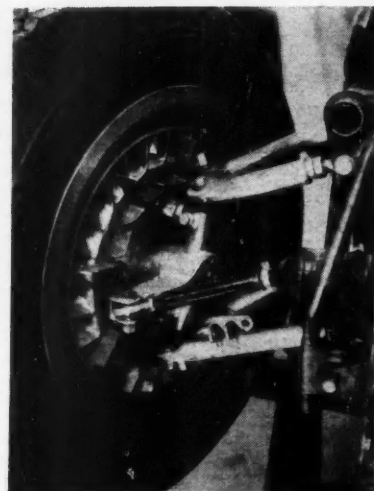


PHOTOS BY BOB D'OLIVO



Possible preview of things to come is 10,000 rpm tach on dash. Corvette shift lever is at left; other instruments are for testing.

Integral drum-wheel has turbine vanes to pump air as wheel rotates. Aircraft ball joints are used on A-arms and steering couplings.



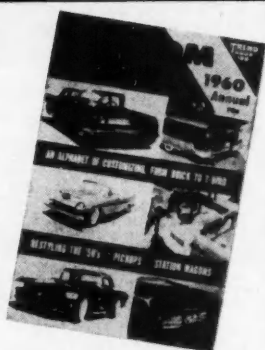
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'37 HORCH 4-pass. cabriolet. Outstanding German classic in very good cond. 8-speed transmission.



de Dion axle, chassis lubricator. \$2500, incl. complete parts car. John S. Lewis, 1630 Hull Dr., San Carlos, Calif.

'31 CADILLAC V-12 4-dr. sed., with sidemount. New tires, engine o'hailed, new uph. & paint. Run perfect; can be driven anywhere. \$950. L. Eschberg, 2000 Western Dr., Midland, Tex. Phone MU 2-1458.

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lubrication, windshield spotlight. Looks & runs good, have never met another. \$850. C. L. Pollard, R.R. 4, Salem, Ill. Phone 939.

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'53 BUICK Skylark. Power steering, brakes, windows. White top 6 mo. old. \$1600. R. L. Wright, 5517 Victory Ave., Racine, Wis.

AUBURN 851 supercharged conv. cpe. Exterior good all around, perf. paint; easily restored to mint cond. Exc. mech. order. Asking \$1200. V. I. Mashek, 134 S. LaSalle St., Chicago 3, Ill. Phone Central 6-4533.

'34 PACKARD Straight 8 spt. cpe., with 6 wheels & rumbleseat. New paint & new chrome. Best offer. William W. Wood, 538 E. 8th St., Azusa, Calif. Phone EDgewood 4-7662.

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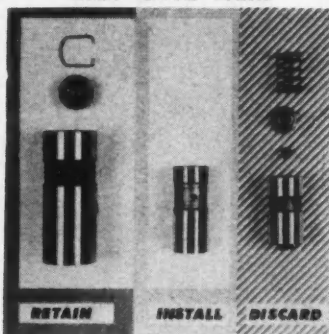
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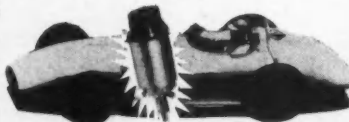
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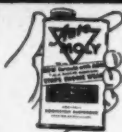
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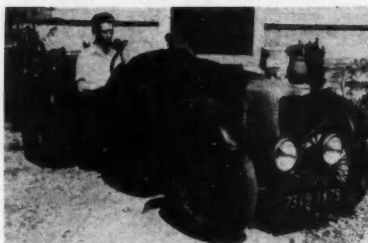
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continued



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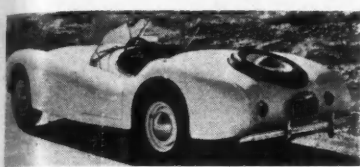
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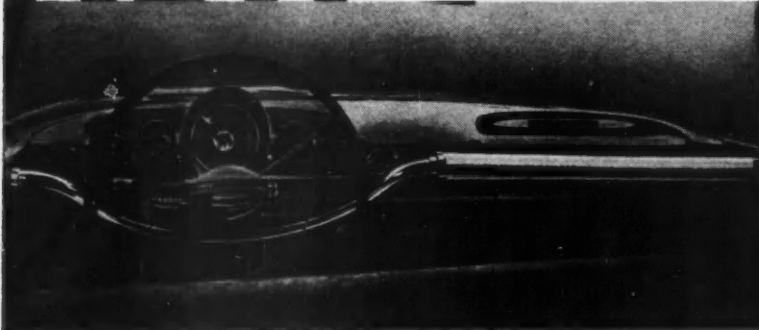
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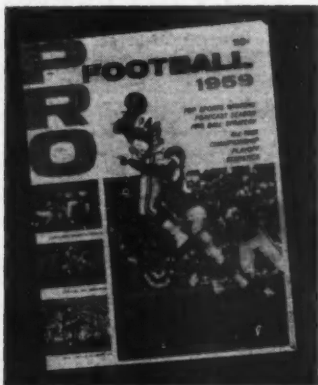
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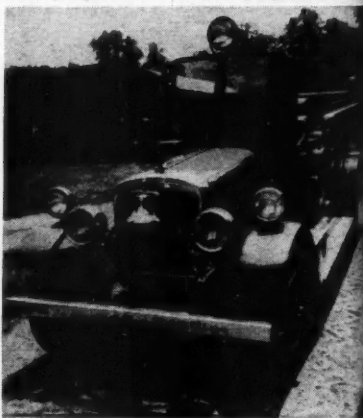
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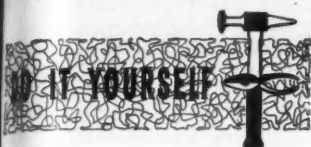
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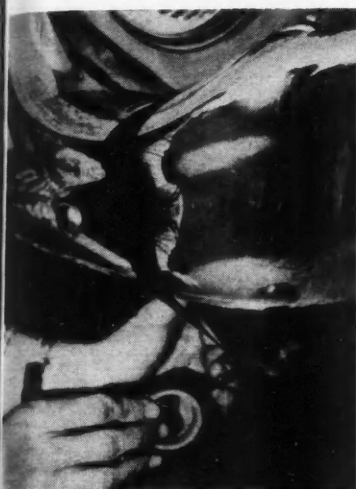
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# Tricks with Tape

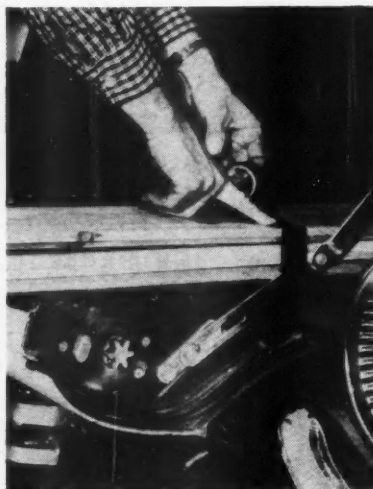
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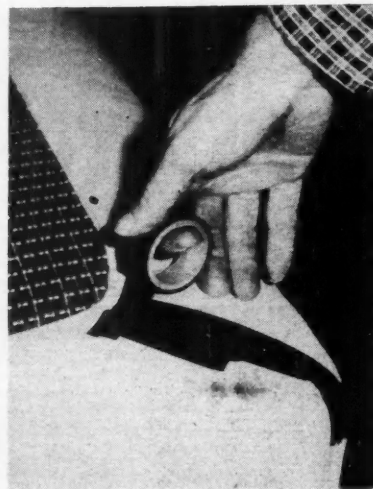
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